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References:

Books:

1. Coulmas, F. (1999). The Blackwell Encyclopedia of Writing Systems. Oxford, Blackwell Publishers.
2. Brooks, G., Gorman, T.P. and Kendal, L. (eds.) (1993). Spelling It Out: The Spelling Abilities of 11- and 15-year-olds. Slough, UK, National Foundation for Educational Research.

Journal articles:

1. Kajii, N., Nazir, T.A. and Osaka, N. (2001). Eye movement control in reading unspaced text: the case of the Japanese script. *Vision Research*, Vol. 41, (19), pp. 25-39.
2. Hirshon, A. (1998). Academic Library Consortia: Past, Present and Future. Retrieved online on 10 August 2006 at http://leigh.edu/{arth5/arh5.html

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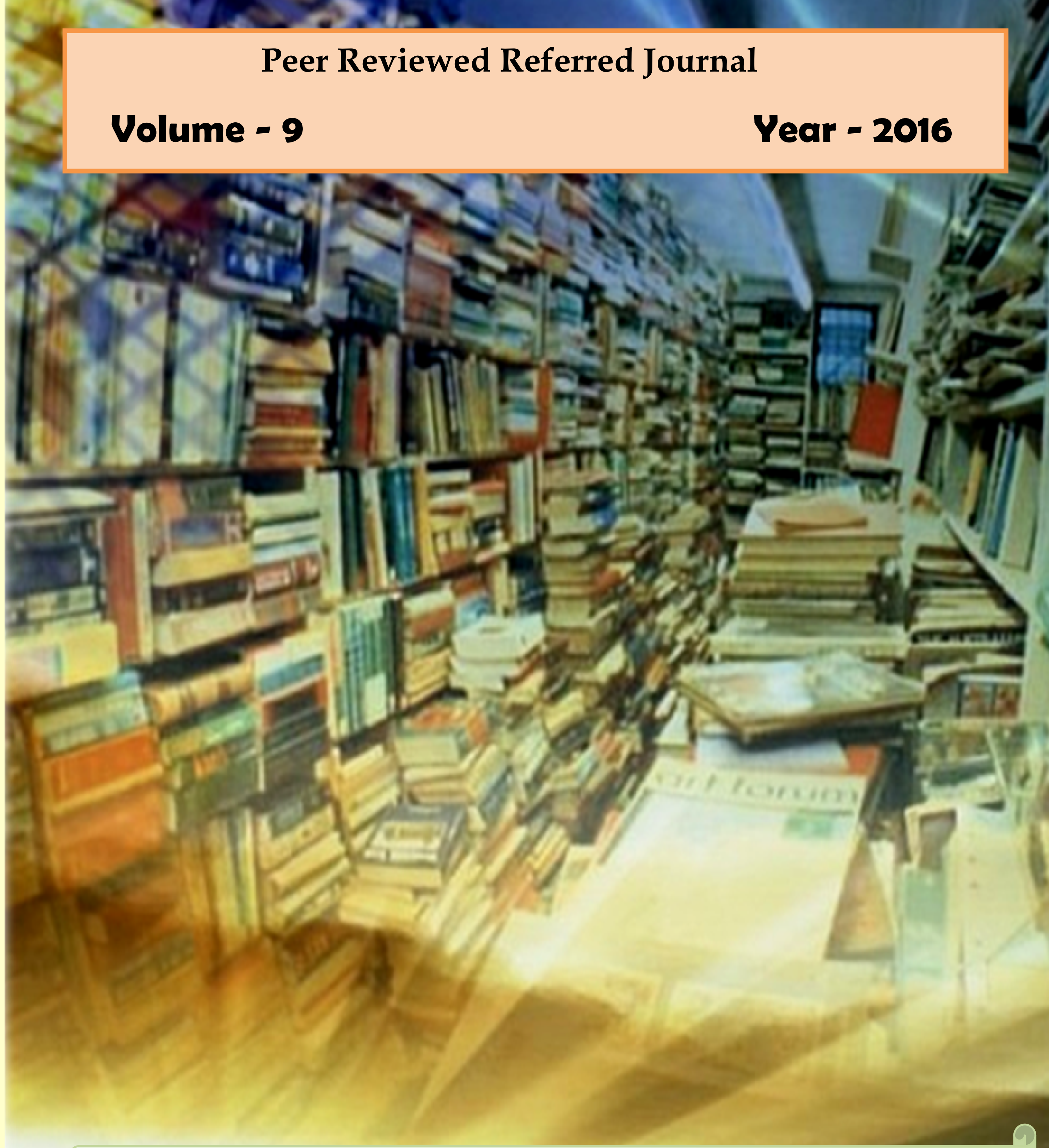

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Information Subject Gateways

Ram Kumar Dangi
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Abstract

Subject gateways are Internet-based services designed to help users locate high quality information that is available on the Internet. The subject gateways provide organized access point to subject specific information on the Internet for the higher education and research community. This paper defines subject gateway and its characteristic, identified some important subject gateways. The paper also discussed INFOPORT, a subject gateway developed by Inflibnet.

Keywords

Subject Gateways; information finding tools, Network Resource; Subject Navigation; Subject Information Gateway

1. Introduction

It has become an important way for researchers in universities to obtain resources from Internet. Internet becomes the main source for finding information. Internet uses starts their search from search engines. Search engines such as Google are often the choice to obtain particular network information. However, due to lack of evaluation on qualities and standards of descriptions, sometimes it is very difficult to get valuable information of a search engine. But search engines provide many results, and it is very difficult to user find out pinpointed and correct result. The quality of the result is also doubtful and difficult for users. The user community needed a qualitative tool to find out quality information. Subject gateways may the correct tools to solve or minimize the problems. Therefore, researchers urgently need a new model to organize and explore online academic information. Subject information gateway with valuable online academic resources to users was built up worldwide, providing valuable online academic resource to users. It helps the users to obtain valuable information more quickly and accurately. Currently, the very important issue we face is to objectively evaluate and compare the subject gateways.

2. Subject Gateways

Subject gateways are a collection of websites on a particular subject. It is different from search engines. Search engines find websites, which may be both good and poor quality websites randomly sorted. But Subject gateways contain only web resources that have been evaluated by subject specialists. Subject gateways contain web resources that have been evaluated and quality checked by subject experts. The websites are arranged in a systematic order or in classified order.

The following characteristics have been marked as distinctive of a subject gateway face to simple collections of links:

- It is an online service that provides links to web sites or documents in Internet.
- The selection is done by an intellectual process according to a quality policy within the audience information needs.
- It produces subject descriptions since each item is catalogued in old or minor depth.
- The order or structure follows a scheme or classification that facilitates navigation.
- Each resource is assigned a series of metadata.
- All these operations are of intellectual sort and a human team, usually integrated by librarians or by specialists in the topic, carries them out by hand.

The main objective of subject gateways is to provide fast and effective access to their users to high quality information through Internet. From the beginning, subject gateways have been linked to the academic world, which nowadays continues to be their principal producer, and they are tools of much utility for students, researchers, educational, and for the public in general interested in accessing general and specialized information.

3. Types of Gateways

There are two kinds of gateways:

Library gateways: Library gateways are collections of databases and informational sites, arranged by subject that have been assembled, reviewed and recommended by specialists, usually librarians. These gateway collections support research and reference needs by identifying and pointing to recommended, academically-oriented pages on the Web.

Subject-Specific Databases (sometimes called "Vortals"): Subject-specific databases or vortals are databases devoted to a single subject, created by professors, researchers, experts, governmental agencies, business interests, and other subject specialists and/or individuals who have a deep interest in, and professional knowledge of, a particular field and have accumulated information and data about it.

4. Important gateways

SN.	Name of Gateways	Subject coverage	URL address
1.	About.com Education	All Subjects	http://www.about.com/education/
2.	Academic Info	All Subjects	www.academicinfo.net
3.	ADAM	Art, Design, Architecture and Media	adam.ac.uk
4.	AHDS	Arts and Humanities	http://www.ahds.ac.uk
5.	Arab Gateway	Arab & Computers	http://www.arabgateways.edu.au
6.	Arts Resources	The Arts	http://www.artres.com/
7.	Biz/ed	Business and Economics	http://www.bized.co.uk
8.	BUBL Link	All Subjects	Bubl.ac.uk
9.	Chemdex	Directory of chemistry on the world wide web since 1993.	http://www.chemdex.org
10.	CrimLinks	Crime, criminology and community justice.	http://crimlinks.com
11.	DMOZ	All Subjects.	http://www.dmoz.org
12.	EdWeb	Educational Reform and Information Technology	http://home.edweb.net
13.	Edinburgh	Engineering, Mathematics	http://www.eevl.ac.uk

	Engineering Virtual Library (EEVL)	and Computing	
14.	Electronic development and environment information system (ELDIS)	Development & Environmental Studies. The database includes over 40,000 summaries and provides free links to full-text research and policy documents from over 8,000 publishers.	http://www.eldis.org
15.	FMO Forced Migration Online	Situation of forced migrants worldwide.	http://www.forcedmigration.org
16.	HUMBUL	HUMBUL covers over thirty subject areas within the humanities	http://humbul.ac.uk
17.	iLoveLanguages	Language-Learning & Linguistics	www.ilovelanguages.com
18.	InfoLaw	Law (UK)	www.infolaw.co.uk
19.	INFOMINE	All Subjects	infomine.ucr.edu
20.	Lawlinks	UK, European Union and International law.	http://www.kent.ac.uk/library/subjects/lawlinks/
21.	Links for Chemists	Chemistry	http://www.liv.ac.uk/chemistry/links/link.html
22.	Math Forum	Links to resources in all areas of mathematics.	mathforum.org
23.	Math Guide	Scholarly information in mathematics	www.mathguide.com

24.	NHS Evidence	Health information	https://www.evidence.nhs.uk
25.	PANDORA	Preserving and Accessing Networked Documentary Resources of Australia.	http://pandora.nla.gov.au
26.	Philosophy Around The Web	Philosophy Studies	http://users.ox.ac.uk/~worc0337/phil_index.html
27.	VirtualLibrary	All Subjects	http://vlib.org/
28.	INFOPORT	All discipline, developed by INFLIBNET	infoport.inflibnet.ac.in

5. InfoPort

The INFLIBNET Centre promotes open access to Indian scholarly content through the INFOPORT. INFOPORT is a Subject Gateway for Indian Electronic-Resources. The InfoPort is designed and developed to serve as a comprehensive gateway to all Indian scholarly content. The gateway open-ups the Indian scholarly content scattered over the Internet through an integrated interface that support search, browse and multiple listing. The InfoPort selectively catalogues online resources of Indian origin on diversified subjects available in open access through an elaborate process of testing and evaluation. The Centre proposes to collaborate with librarians and scholars in college and universities in the process of identification and selection of resources. The universe of knowledge is divided into different subject groups. According to the Dewey Decimal Classification, the universe of knowledge is scattered from 000 to 999. InfoPort is classified according to DDC, indexed subject wise and arranged alphabetically subjects.

5.1. Coverage of the InfoPort

The InfoPort covers Internet resources of Indian origin in the following categories:

1. Electronic books, electronic journals and reference sources including dictionaries, directories, maps etc.;
2. Institutional repositories, resource gateway, etc.

3. Wikis, blogs, etc.;
4. Teaching and learning website;
5. Lecture Notes, Magazines,:
6. Portals;
7. Audio, video and other multimedia learning resources;
8. Libraries, archives and museums;
9. News and media services including newspapers, online news services,;
10. Websites listing current events and activities;
11. Websites of Major Research projects, especially those supported by national funding bodies such as UGC, DST, DBT, AICTE, MHRD, DOT, etc.;
12. Teaching and learning projects website, especially those receiving Government funding;
13. Universities, colleges, Research and Development Labs, institutions and e-learning websites.
14. Indian publishers and subscription agents; and
15. Listservs and discussion groups, especially those having online archives.

5.2. Limitations of the InfoPort

InfoPort does not cover resources other than those originated in India. More specifically, it does not include Internet resources of the following kinds:

1. Website containing information with potentials of promoting illegal activities;
2. Resources which contravene laws relating to defamation or obscenity;
3. Resources that do not meet our selection and evaluation criteria;
4. Resources designed solely for marketing, advertising and for sale of commercial products;
5. Sites that do not contain significant online resources beyond simple course descriptions, staff directories, etc.;
6. Personal web pages created by and about that individuals; and
7. Audio, video and multimedia website related to Bollywood, etc.

6. Conclusion

Subject gateways are quality services which have proliferated in Internet, even in specific areas of knowledge. Subject Gateways are important elements in today's information landscape. In contrast with Internet directories resource descriptions in Subject Gateways are of high quality and the services are of use to researchers, academics and other professionals in the specific field, and could be of use to the wider community. It has a short period of existence. All of them are in continuous evolution and improvement. They are very useful services, so it is essential that we make them known to our users and we favour their use in the search of information. .

References:

1. Heron, S. J & Hanson, A. (2003). From subject gateways to portals: The role of metadata in accessing international research. In N. Callaos (Ed.) Conference proceedings of the SCI 2003: The 7th world multiconference on systemics, cybernetics, and informatics (pp. 529-533). Orlando, Florida: International Institute of Informatics and Systemics at http://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=1011&context=dean_cbcs

2. K Prakash V S Cholin T A V Murthy. Potential Role of Subject Gateways, Portals and OPAC's in Electronic Journals Access. 3rd International CALIBER - 2005, Cochin, 2-4 February, 2005, © INFLIBNET Centre, Ahmedabad p 668-678. At http://ir.inflibnet.ac.in/bitstream/1944/1581/1/79.pdf

3. Place, Emma. International Collaboration on Internet Subject Gateways. *In:* IFLA Council and General Conference. Conference Programme and Proceedings (65th, Bangkok, Thailand, August20-28, 1999); available at http://www.ifla.org/IV/ifla65/papers/009-143e.htm.

4. Tramullas, J & Garrido, P. (2005). "Constructing Web subject gateways using Dublin Core, RDF and Topic Maps" *Information Research*, **11**(2) paper248. Available at http://InformationR.net/ir/11-2/paper248.html

5. Zhang Xiya, Xiao Xiaobo, Zhang Huijun. Comparative Study on Subject Information Gateway of the World. At Comparative Study on Subject Information Gateway of the World.

6. InfoPort. Available at infoport.inflibnet.ac.in

Developing Info-literate Youth for Digital India

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Abstract

Institutions of higher education can play an important role in preparing the Indian youth for Digital India by developing them into info-literates. A survey of libraries of Central Universities of India shows that much needs to be done to implement an effective information literacy program. The universities have to realize the need for information literacy and also recognize that libraries can play an important role in its implementation. Libraries too have to play an active role - collaborate with faculty and administration; promote awareness about information literacy; and get information literacy integrated in the curriculum. Framing and implementation of policies at national level in this regard will ensure that our students will be capable info-literate youth, ready for information society of tomorrow.

Keywords

Digital India, Info-literate, Information competency, Information literacy, Information skill

1. Introduction

India today is a fast developing economy moving towards being a self reliant developed country. The Government of India visualizes India to be a fully digital information society by 2020 with IT infrastructure and Internet accessibility to one and all. It aims to provide e-governance and e-services to its citizens and accordingly it has to empower its citizens to adopt and adapt to these changes.

In such a dynamic and vibrant Information Society an individual has to also change, upgrade and update oneself to keep pace with time. It is a necessity of Information Age and this can be achieved only when right information is available at the right time. Information Literacy (IL) provides us the necessary skills required to access the right information at the right time and use it effectively. It is the key which will help the citizens survive and flourish in Digital India.

Institutions of higher education can play an important role in developing the Indian youth into info-literates, well prepared to step into Digital India with confidence. Libraries have to play an active role in introducing and implementing Information Literacy Programme (ILP) in the academic institutions to meet the vision of Digital India. With this perspective in mind, this study aims to assess the status of ILPs implemented by libraries of Central Universities. It also aims to study whether the efforts made by the Universities are sufficient to meet the goal of developing Digital India and suggest ways to do the same.

2. Importance of information literacy in Digital India program

Department of Electronics and Information Technology, Government of India, under the Chairmanship of the Prime Minister, has launched an ambitious programme called “Digital India” to transform India into a digitally empowered society and knowledge economy.

The program focuses on three key areas:

- Digital infrastructure
- E-governance and e-services
- Digital empowerment of citizens

It is envisaged as an umbrella programme covering many departments and weaving many ideas, schemes and programmes together to make the mission transformative in totality. It aims to prepare India for a knowledge future with technology central to enabling changes. It is expected that by 2020 India will transform into Digital India with e-governance and e-services; digitally empowered citizens; and India a leader in IT use in services namely health, education and banking (Digital India Programme, 2014).

To survive in such a knowledge-based digital society, Information Literacy will be prerequisite for every Indian citizen. It has also been stated by the US National Commission on Library and Information Science (2003), Information Literacy "encompasses knowledge of one's information concerns and needs, and the ability to identify, locate, evaluate, organize and effectively create, use and communicate information to address issues or problems at hand; it is a pre-requisite for participating effectively in the information society, and is part of the basic human right of life-long learning" (Webb and Powis, 2004).

The vision of Digital India emphasizes increased need for information literacy and a pro-active role of institutions of higher education in this regard because higher education institutions are asked to provide students with both problem-solving and decision-making skills that will enable them to compete in today's changing workplaces. To meet this objective, it is required to prepare students to be information literate individuals who have ability to locate, process and use information effectively. Higher education should help students to become lifelong, self-directed and independent learners, the requirement being that the students need to become excellent producers and consumers of information (Pawinun, Nyamboga and Kemaraju, 2001).

Indian Government has set up Central Universities in India with an objective to develop these universities as World Class Universities. The aim is not only to provide world class instructional and research facilities but also to promote innovations in teaching-learning process. It aims to train manpower for the development of the country by intellectual, academic and cultural development of individuals to meet the ultimate goal of improving the socio-economic condition and welfare of the people. To achieve these objectives it is essential that our students are aware info-literates (Ministry of Human Resource and Development).

3. Methodology

3.1 Literature review

The idea of IL, was conceptualized, long back in European countries in 1970's and now recognized as critical literacy for the 21st century (Bruce, 2002). There are many IL organizations in USA which impart training in IL and also develop standards for the same like, ACRL's Instruction Section, ALA's Library Instruction Round Table (LIRT), California Clearinghouse on Library Instruction (CCLI), National Forum on IL, IFLA IL Section, etc. The American Association of School Libraries (AASL) and Association of Education and Communication Technology (AECT) have also provided standards to foster IL skills in students (AASL/AECT, 1989). Many IL, Research or Information Problem Solving Models have been developed for teachers to use with pupils; The Big 6, Research Cycle, The Alberta Model, The Seven Pillars Model, etc. are some of some of them. The Australian and New Zealand Institute for IL (ANZIIL) has emphasized that those students who understand how to process information will be productive throughout their lives (www.anziil.org). ILP team of National Literacy Board (NLB), Singapore established in Sep. 1995 is engaged in developing and delivery of IL. The necessity of a person's special training to Life in the Information Society is underlined in the main documents of the World Summit on the Information Society, two stages of which took place in 2003 in Geneva and in 2005 in Tunis. IFLA-ALP (Action for Development through Libraries) and UNESCO-IFAP (Information for All Programs) are ambitious programs in this regard. The German IL community has managed to create a major communication tool for the whole community: the gateway http://www.informationskompetenz.de/ hosted by the library of Ludwig Maximili (Orde and Wein, 2009). In Russia, Kemerovo State University of Culture and Arts (KemUCA) has been working within UNESCO-Information for All Program since 2000. IL and Information Culture are promoted by teachers and librarians through a program called "Principles of Information Culture" (Gendina, 2009). IFLA and UNESCO work in collaboration to promote education and lifelong learning. They have together created the Knowledge Community on Information Literacy and the 37th UNESCO General Conference held in Paris (5-20 November 2013) passed the IFLA Media and Information Literacy (MIL) Recommendations and the Libraries Serving People with Print Disabilities (LPD) Manifesto (http://www.ifla.org/node/8208).

Many research studies have been conducted in developed countries since the beginning of 2000 to assess the importance of IL and suggest means for its effective implementation. Pawinun, Nyamboga and Kemparaju's (2001) study in Thailand and Kenya shows that IL has a wide range and so ILP should have different sections and should be provided through different methods. A quasi-experimental study conducted with two clusters of 13 year old students shows that IL training greatly enhances the output (Mokhtar, Foo and Majid, 2007). Vezzosi's (2008) project report on a multi-year ILP offered to a group of students attending the Environmental Science degree course reveals that the students improve, along their study path, in terms of knowledge and skill due to IL. Stanger (2009) opines that in higher education libraries should play a supporting role and the ILP should be implemented by the faculty of the concerned discipline. Perez and Murray (2010) have argued that better understanding and more effective measurement of ICT literacy are needed to gauge readiness to both pursue higher education and enter the workforce. Studies by Chu, Chow and Tse (2009) and Carey and Pun (2012) emphasize the need for a faculty-librarian collaborative ILP.

In India, Joshi and Sharma's (2005) survey shows low awareness of students towards their information needs and need for help in Library and Internet use. They suggest implementation of systematically planned ILP, offered in both instructor-provided and self-learning mode. Rao and Nagar (2005) recognize the need for IL for both teachers and learners. Choudhary and Sethi's (2009) study shows that though the library professionals have basic computer knowledge they should be provided with training on use of IT tools for information searching and using e-resources. Sharma (2010) strongly recommends inclusion of information literacy as part of course curriculum and Singh (2012) recommends refinement of information literacy program according to the changing electronic environment and increased use of e-resources.

3.2 Objective

It is an attempt to study the status of information literacy programme being conducted by the library in Central Universities of India. It will help us to understand the problems faced by the libraries in the implementation of information literacy programs and suggest ways to overcome the same.

3.3 Scope and significance

There are 40 Central Universities in India under the governance of Ministry of Human Resource and Development out which 16 have been established in 2009. Out of these 16 new universities 03 are old State Universities which have been upgraded to Central Universities. As the 13 new Universities are still in the process of developing infrastructure and establishing themselves they have not been included in the study. So, libraries of 27 Central Universities of India come under the scope of this study.

3.4 Method

The study is survey based with questionnaire as the tool for data collection. A structured questionnaire was administered to all the libraries of 27 Central Universities under the scope of study. The data thus collected was tabulated and analysed to draw the inferences.

4. Data analysis

The questionnaires were sent to the librarians of 27 libraries under the scope of study to collect information on the ILP being conducted by these libraries. The response by the respondents has been tabulated in the tables given below:

Table 1. Number of respondents

Information Literacy Programme	No. of Libraries
Conducted	17 (62.96%)
Not Conducted	03 (11.11%)
No Response	07 (25.93%)
Total	27 (100%)

Table 1 shows that 17 (62.96%) libraries conduct ILP and 03 (11.11%) do not conduct ILP. In spite of the best efforts response could not be received from 07 (25.93%) libraries.

Table 2. Budget allocation for ILP

Budget Allocation for ILP	No. of Libraries
Available	02 (11.76%)
Not Available	15 (88.24%)
No Response	Nil (0.00%)
Total	17 (100%)

Only 02(11.76%) libraries under study have separate budget allocation for conducting ILP while there is no separate budget allocation in 15(88.24%) libraries for the programme.

Table 3. Instructors for ILP

Training by	No. of Libraries
Only Library Staff	08 (47.06%)
Only Academic Staff	Nil (0.00%)
Only Staff of e-publishers	Nil (0.00%)
Both Library Staff and Academic Staff	01 (05.88%)
Both Library Staff and Staff of e-publishers	06 (35.29%)
Library Staff, Academic and Staff of e-publishers	02 (11.76%)
Total	17 (100%)

Table 3 shows that in 8 (47.06%) libraries ILP is conducted independently by the library staff and in 6 (35.29%) libraries it is conducted by library staff and staff of e-publishers whereas in 02 (11.76%) libraries it is conducted by Library Staff, Academic Staff and Staff of e-publishers and 01 (5.88%) library do it with collaboration of Library Staff and Academic Staff.

Table 4. Compulsory ILP

Information Literacy Programme	No. of Libraries
Compulsory	08 (47.06%)
Not Compulsory	09 (52.94%)
No Response	Nil (0.00%)
Total	17 (100%)

Table 4 shows that 08 (47.06%) libraries have made ILP compulsory for students and research scholars but it is not compulsory in 09(52.94%) libraries.

Table 5. Integration of ILP in the curriculum

Information Literacy Programme	No. of Libraries
Integrated as part of Curriculum	01 (05.88%)
Not Integrated as part of Curriculum	16 (94.12%)
No Response	Nil (0.00%)
Total	17 (100%)

ILP has been integrated in the curriculum by only 01 (5.88%) university while 16 (94.12%) Universities have not integrated it in the curriculum.

Table 6. Assessment of user needs

User Needs	No. of Libraries
Assessed	11 (64.71%)
Not Assessed	05 (29.41%)
No Response	01 (05.88%)

Total	17 (100%)

The above table shows that 11 (64.17%) libraries assess user requirements while 05 (29.14%) libraries do not assess user requirements before conducting the ILP. One library did not respond to the question.

Table 7. Method of assessment

Method of Assessment	No. of Libraries
By User Survey through Questionnaire	02 (18.18%)
By Analysing Library Records	01 (09.09%)
By Observation	04 (36.36%)
By On-line Assessment	01 (09.09%)
By Questionnaire, Analysing Library Records and Observation	02 (18.18%)
No Response	01 (09.09%)
Total	11 (100%)

Table 7 shows that 04 (36.36%) libraries use Observation method to assess user requirement while Survey through Questionnaire is used by 02 (18.18%) libraries, Analysing Library Records by 01(09.09%) library and On-line assessment by 01 (09.09%) library. Questionnaire, Analysing Library Records and Observation, all three methods are used by 02 (18.18%) libraries. One library did not respond to the questionnaire.

Table 8. Adoption of IL standards/models

IL Standards/Models	No. of Libraries
Adopted	04 (23.53%)
Not Adopted	10 (58.82%)
No Response	03 (17.65%)
Total	17 (100%)

It is evident from the above table that 10 (58.82%) libraries do not adopt Information Literacy Standards and Models. Only 04 (23.53%) libraries claimed to use IL standards/models but did not mention which standard/model is being used by them. Three libraries (17.65%) did not respond to the questionnaire.

Table 9. Separate section/staff for ILP

Information Literacy Programme	No. of Libraries
Separate Section/Staff	02 (11.76%)
No Separate Section/Staff	15(88.24%)
No Response	Nil (0.00%)
Total	17 (100%)

There is no separate section/staff to conduct ILP in 15 (88.24%) libraries and only 02 (11.76%) libraries have separate section/staff for the purpose.

Table 10. Evaluation of ILP

Information Literacy Programme	No. of Libraries
Evaluated	06 (35.29%)
Not Evaluated	09 (52.94%)
No Response	02 (11.76%)
Total	17 (100%)

Table 10 shows that 09 (52.94%) libraries do not evaluate the ILP after implementation, 06 (35.29%) libraries evaluate the ILP after implementation and 02 (11.76%) libraries did not respond to the question.

Table 11. Constraints in implementation of ILP

Constraints	No. of Libraries
Lack of Staff	06
Lack of trained staff for the purpose	05
Lack of enthusiasm in the staff	01
Lack of finance	07
Lack of administrative support	06
Lack of Policy in this regard	08
Need for Information Literacy Programme not felt by users	03
Lack of Faculty Support	01
No Response	02

It is evident from the above table that Lack of Policy (08 libraries) is a major constraint for implementation of ILP followed by Lack of Finance (07 libraries), Lack of Administrative Support and Lack of Staff (06 libraries) and Lack of Trained Staff (05 libraries).

5. Findings and suggestions

Table 1 shows that most of the libraries (17, 62.96%) under the scope of study conduct Information Literacy Programmes but table 2 shows that only 02 (11.76%) out of the 17 libraries have a separate budget for the purpose. It is a known fact that implementation of ILP requires finance and so it is evident that ILP is not being given importance. It is also emphasized by table 10 where 07 libraries out of 17 find Lack of Finance a constraint in implementation of ILP. It is suggested that libraries should realize the importance of ILP and formulate a policy to conduct regular ILPs. Allocation of a separate budget for the purpose is a must for regularly and effectively conducting ILPs.

Table 3 shows that ILP is conducted independently by the library staff by 08 (47.06%) libraries while in 06 (35.29%) libraries ILP is also conducted by the staff of e-publishers. Only 3 (17.65%) libraries have admitted to the involvement of academic staff in conducting the ILPs. This shows that there is a lack of collaboration between library staff and the faculty members. It is suggested that ILPs should be designed and implemented in consultation with faculty members because this will help the library staff to better understand the requirements of the students and the curriculum and hence deliver a more effective ILP. It will also help the librarian to develop good relations with that academic staff.

Table 4 shows that ILP is compulsory for students and research scholars in only 8 (47.06%) libraries and table 5 shows that ILP has been integrated into the curriculum by only 01 (5.88%) library. This finding brings out the unfortunate fact that even reputed institution of higher learning like Central Universities have failed to understand the importance of information literacy. It is suggested that library professionals should play an active role and collaborate with faculty members to promote information services and information literacy. It is an urgent need to get ILP integrated into the curriculum and make it compulsory for the students and research scholars.

In order to get the required outcome it is mandatory to assess user needs before implementation of any programmes but table 6 shows that 05 (29.41%) libraries do not assess user needs before implementation of ILP and out of the 11(64.71%) libraries which do assess user needs, 04 (36.36%) libraries (table 7) base their assessment only on observation. It is suggested that libraries should lay emphasis on assessing user needs through direct and indirect methods so that ILPs can be customized according to user needs. This will ensure efficient and effective implementation of ILP.

Table 8 shows that 10 (58.82%) libraries do not follow any IL standard/model and the libraries that do follow IL standard/model have not mentioned which IL standard/model they are following. It would be beneficial if libraries follow one of the international IL standard/model proposed by ALA, IFLA, etc.

Table 9 shows that only 2 (11.76%) libraries have separate section/staff to conduct ILP. Proper implementation of ILP requires separate staff which is trained for the purpose and is able to devote time for designing, implementation and evaluation of ILP. Table 11 also shows that 6 libraries feel Lack of Staff and 5 libraries feel Lack of ILP trained Staff is a constraint in the implementation of ILP. It is suggested that libraries should develop a separate IL section with trained staff to conduct ILPs.

Any programme needs to be evaluated after implementation but table 10 shows that half the libraries i.e. 9(52.94%) do not evaluate their ILP after implementation. Feedback should be mandatorily taken after implementation of ILP and also assessment of user’s information skills should be done to see the impact of ILP, this will help us to improve the ILP.

Table 11 shows that the major constraints for implementation of ILPs are Lack of Policy (08 libraries), Lack of Finance (07 libraries), Lack of Administrative Support (06 libraries), Lack of Staff (06 libraries) and Lack of Trained Staff (05 libraries). Most of the constraints can be removed if libraries can muster the support of administration, faculty and users and for this purpose the libraries should concentrate on promotion of library services and increase awareness about importance of ILPs.

It is evident from the above findings that libraries of Central Universities do not have the basic infrastructure like a separate section and trained staff to conduct ILPs. There is also lack of administrative support and finance. To overcome these problems, the respondents opine that ILP should be integrated into the curriculum and made compulsory for all users. They have also suggested that it should be customized according to user, designed subject-wise and conducted at least twice a year. They have emphasized on framing a policy in this regard which will facilitate fund allocation, standardization and smooth implementation of the programme.

India is about to transform into Digital India and Central Universities have to realize their responsibility in preparing today's youth for it. There is an increased role of information literacy and library in today's performance based education system and so also an urgent need to develop a framework for Information Literacy in higher education. The universities need to realize the importance of Information Literacy and recognize the importance of libraries in this regard. The libraries will also have to play a proactive role - promote their resources and services, collaborate with faculty and administration and spread awareness about Information Literacy and its utility and importance. Libraries and library professionals have a key role to play in developing the youth into info-literate individuals capable of not only survival but development in the Digital Age. So, it is suggested that training of library professionals and academicians as information literacy instructors should be taken up immediately.

The Indian Government also needs to take concrete steps in this direction at national level. A National Forum on information literacy is the need of the hour (Thapa, 2012). National level policies need to be framed for implementation of information literacy at all levels. It will ensure adoption of International Information Literacy Standards and also development/modifications of Information Literacy Standards to meet the local variations and demands.

6. Conclusions

India today is embarking on a new mission of developing India into “Digital India” by 2020. We visualize India as a knowledge-based society based on e-governance and providing e-services to its citizens. The challenge and opportunity now is to develop our youth into informed and enlightened citizens who are capable of participating in this growth process and enhancing national development.

We have to remember what Kehoe has rightly said, access to vast amount of information is not the whole answer. The power to discover the right information quickly and easily, to separate nice to know from need to know information is essential, if superhighway users do not drown in electronic junk information. An information flood does not necessarily mean that people become informed.

It is required that Indian Government and Central Universities realize the importance of Information Literacy, and keeping the Knowledge Commission Reports and vision of Digital India in mind, draft their policies for implementation of ILP. Information Literacy has to be taken up on a war footing otherwise in spite of the infrastructure and mechanism in place our youth will not be prepared to adapt or take benefit of Digital India.

References

1. AASL/AECT (American Association of School Libraries and Association of Education and Communication Technology). (1998). Information Power: Building Partnership of Learning. Chicago: AASL/AECT.
2. Bruce, C. S. (2002). Information Literacy as a Catalyst for Education Change: A Background Paper. (White Paper Prepared for UNESCO). http://www.nclis.gov/libinter/infolitconf&meet/papers/
3. Carey, Elaine & Pun, Raymond. (2012). Doing History: A Teaching Collaboration Between St. John's University and the N.Y. Public Library. *College and Research Libraries News,* 73(3), 138-141.

4. Choudhary, B. K. & Sethi, Bipin Bihari. (2009). Computer Literacy of Library Professionals in the University Libraries of Orrisa: An Analytical Study. *IASLIC Bulletin*, 54(1), 15-30.
5. Chu, S., Chow, K., and Tse, S. K. (2009). The Development of Students' Information Literacy and IT Skills via Enquiry PBL and Collaborative Teaching. The 2009 ASIS&T Annual Meeting, Vancouver, B.C., Canada. http://hdl.handle.net/10722/127050
6. Digital India Programme, Department of Electronics and Information Technology, India. (2014) http://deity.gov.in/sites/upload_files/dit/files/Digital%20India.pdf
7. Gendina, Natalia. (2009). Information Literacy in Russia. Information Literacy Publications, IFLA. http://www.ifla.org
8. Joshi, Manoj K. & Sharma, Sanjeev. (2005). Need for Information Literacy Education in Kurukshetra University. In Proceedings of 51st All India Conference of ILA on Libraries, Information Literacy and Lifelong Learning. (pp. 249-258). Haryana: ILA, Kurukshetra University.
9. Kehoe, L. (1993). Casting the Net Worldwide. *Financial Times*, 30, 11.
10. Knowledge Commission Report. (2007). http://knowledgecommission.gov.in/downloads/report2007/
11. Ministry of Human Resource and Development. http://mhrd.gov.in/sites/upload_files/mhrd/files/upload_document/CentralUniversitiesAct.pdf
12. Mokhtar, Intan Azura, Foo, Schubert and Majid, Shaheen. (2007). Guide Me, Show Me: Personalized Coaching as a Means of Instilling Information Literacy Competencies in Students. *LIBRES*, 17(2).
13. Orde, Heike Vom & Wein Franziska, Erfurt. (2009). Information Literacy: An International State-of-the-Art Report. Information Literacy Publications, IFLA. http://www.ifla.org
14. Pawinun, P., Nyamboga, C. M., and Kemaraju, T. D. (2001). Information Literate Users and the Digital Society. Proceedings of 4th International Conference of Asian Digital Libraries. (pp. 231-246). Bangalore.
15. Perez, Jorge & Murray, Meg Coffin. (2010). Generativity: The New Frontier for Information and Communication. *Technology Literacy. Interdisciplinary Jr. of Information, Knowledge and Management*, 5.
16. Rao, A. S. & Nagar, B. R. (2005). Information Literacy: It's Impact on Teaching and Learning in 21st Century. Proceedings of 51st All India Conference of ILA on Libraries, Information Literacy and Lifelong Learning. (pp. 237-248). Haryana: ILA, Kurukshetra University.
17. Sharma, Yogita. (2010). Information Literacy in Indian Agricultural Universities: A Study of Punjab Agriculture University. *Library Herald*, 48(4), 345-357. http://www.IndianJournals.com
18. Singh, Neena & Klinngenberg, Andreas. (2012). Information Literacy in India and Germany: University Libraries as Activators of Life-long Learning. *DESIDOC Journal of Library and Information Technology,* 32(3), 265-276.
19. Stanger, Keith. (2009). Information Literacy in Higher Education: A Perspective on the Roles of Librarians and Disciplinary Faculty. *LIBRES*, 19(1).
20. Thapa, Neelam. (2012). Information Literacy: Need of the Hour. In Prasher, R. G. and Sharma, R. K., (Ed). *ICT Based Information Management in Indian Libraries*, (pp.23-45). Delhi: Bookwell.
21. Vezzosi, Monica. (2008). Linking Teaching and Learning: A Longitudinal Approach to the Assessment of Information Literacy. Italy. http://edoc.hu-berlin.de/conferences/bobcastsss 2008/
22. Webb, Jo & Powis, C. (2004). Teaching Information Skills (pp. 7-8). London: Facet Publishing.

Concept of Digital Library: Case Study of Library Professionals in Chennai

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Abstract

We are currently witnessing the stone age of digital libraries. As a result, libraries are facing new challenges; new competitors, new demands, new expectations and a variety of information services from users tailored to their wants and needs. This study seeks to examine the Library professionals awareness, concept and experience on Digital Library. Questionnaire method was adopted. Sixty questionnaires were distributed among the selected library professionals working in Engineering Colleges and University in Chennai. Forty seven responses were received. They were analyzed the same were discussed in this article.

Keywords

Digital Library, Awareness, Library Professionals, Case Study & Chennai

1. Introduction

In new-style libraries combining services such as teaching, information technology (IT)facilities and access to academic archives with library services has brought morestudents through the library doors and most importantly has increased the number ofresources borrowed (Hewitson, 2002).Digital library is to be highly active area for research and development in IT intrinsic library and information discipline. In order to handle a digital library, a professional has to be dynamic and well equipped with relevant knowledge of linking of digital libraries to digital learning environment, knowledge sharing and how to develop course modules. To cope up with the problem, library professional and user needs to acquire detailed knowledge about the digital world are Knowledge of computer; Knowledge of source of electronic information; Knowledge of digitization; Translation skills; Techniques of evaluating the quality of information; Compilation and editing skills and Knowledge of copyright laws and the patent act.

2. Concept of Digital Library

Numerous terms are used by authors to denote the concept of digital libraries. Digital libraries contain diverse information for use by many different users. Digital libraries range in size from tiny to huge. They can use any type of computing equipment and any suitable software. The unifying theme is that information is organized on computers and available over a network, with procedures to select the material in the collections, to organize it, to make it available to users, and to archive it."

According to E.A. Fox the digital library may be defined as the “New way of carrying out the functions of libraries encompassing new types of information resources, new approaches to classification and cataloguing, intensive use of electronic systems and networks and dramatic shifts in intellectual, organizational and electronic practices ”.

The Associations of Research Libraries (ARL) (1955) has identified five elements common to all definitions of digital library as under.

1 The digital library is not a single entity;
2 The digital library by requires technology to link resources of many;
3 These links are transparent to end-users;
4 Universal access to the digital libraries and information services in the goals; and
5 Digital library collections are not limited to document surrogates, but they also include digital artifacts that cannot be represented or distributed in printed formats.

In broad sense digital library is a computerized system that allows users to obtain a coherent means of access to an organized, electronically stored repository of information and data. The digital library is on electronic library consisting of information in the Digital, analog and digitized form.

3. Related Literature

Digital library Works such as Goncalves et al and Klas et al.,presents standards for Digital Library formats with the goal of recording data for the evaluation of Digital Libraries. These studies give detailed information about system behaviour and access to its services, storing data that indicate critical aspects about user interaction with the Digital Libraries. It seems that the study has not been carried out based on the person who is responsible for organizing and maintaining the Digital Library systems. In this study attempt has been made to evaluate the awareness and method of acquiring of knowledge on the conceptual factors of digital library by the Library and Information Professionals who is responsible for creating and maintaining the digital library.

4. Objectives

The major objectives of the study are

- To know the level of awareness of the digital library among the library professionals in Chennai.
- To identify the mode of learning of the conceptual factors on digital library among the library professionals in Chennai.

5. Methodology

The empirical data were collected through questionnaire methods. Sixty questionnaires were distributed among the sixty library professionals working in different environments such as Engineering Colleges and University in and around Chennai. An informal data collection method has also been adopted to identify the reality of their knowledge on digital library.

6. Scope

The study covers the library professionals working in different environments such as Engineering Colleges and University in around Chennai only.

7. Conceptual Factors

Twelve essential conceptual factors were identified based on literature review and the same has been grouped in to four broad categories such as *"storage devices"*, *"data format"*, *"digital library software" and "digital library standards"*.

More than 50% of library professionals are *"familiar and proficient"* on *"storage"* aspect of digital information. The *"Mode of Learning"* of these skills is also through *"books"* and *"Library Seminar"*.

With regard to *"Formats"* of digital data, it can be seen that more than 50% of LIS professionals are having *"Familiar"* and *"Proficient"* except in the case of "Meta data". 44.7% of LIS professionals indicated that they do not have any skill on "Meta data" and other 44.7% indicated that they are learning.

TABLE- I

LEVEL OF AWARENESS AND MODE OF LEARNING ON CONCEPTUAL FACTORS OF DIGITAL LIBRARY

Group	S.No	Description	Level of Awareness (N=47)				Mode of Learning (N=47)			
			NS	L	F	P	ST	B	LS	FC
Storage	1	Awareness on Storage Devices	3 (4.6)	8 (17.0)	34 (72.3)	2 (4.3)	0 (0.0)	29 (61.7)	11 (23.4)	7 (14.9)
	2	Awareness in Digital Storage	2 (4.3)	8 (17.0)	15 (31.9)	22 (46.8)	16 (34.0)	16 (34.0)	10 (21.3)	5 (10.6)
	3	Awareness in Digital Storage Security	2 (4.3)	14 (29.8)	13 (27.7)	18 (38.3)	9 (19.1)	22 (46.8)	13 (27.7)	3 (6.4)
Format	4	Awareness in Graphic /Audio Formats	5 (10.6)	15 (31.9)	11 (23.4)	16 (34.0)	14 (29.8)	16 (34.0)	17 (36.2)	0 (0.0)
	5	Awareness in Moving Image formats	5 (10.6)	9 (19.1)	23 (48.9)	10 (21.3)	5 (10.6)	16 (34.0)	9 (19.1)	17 (36.2)
	6	Awareness in Metadata	21 (44.7)	21 (44.7)	5 (10.6)	0 (0.0)	13 (27.7)	12 (25.5)	20 (42.6)	2 (4.3)
Software	7	Awareness in Server Programs	16 (34.0)	9 (19.1)	13 (27.7)	9 (19.1)	15 (31.9)	8 (17.0)	13 (27.7)	11 (23.4)
	8	Awareness in Digital Library Softwares	4 (8.5)	17 (36.2)	9 (19.1)	17 (36.2)	10 (21.3)	18 (38.3)	17 (36.2)	2 (4.3)
	9	Awareness in Metadata Description	11 (23.4)	10 (21.3)	19 (40.4)	7 (14.9)	0 (0.0)	14 (29.8)	23 (48.9)	10 (21.3)
Standards	10	Awareness in RDF Standards	11 (23.4)	22 (46.8)	11 (23.4)	3 (6.4)	4 (8.5)	21 (44.7)	11 (23.4)	11 (23.4)
	11	Awareness in Digital Library Standards	11 (23.4)	15 (31.9)	16 (34.0)	5 (10.6)	11 (23.4)	27 (57.4)	4 (8.5)	5 (10.6)
	12	Awareness about Standards Organization	9 (19.1)	8 (17.0)	27 (57.4)	3 (6.4)	11 (23.4)	11 (23.4)	19 (40.4)	6 (12.8)

NS = No Skill, L = Learning, F = Familiar, P = Proficient
ST = Self Thought, B = Book, LS = Library Seminar, FC = Formal Course

In relation to "Software", two aspects namely *"Awareness on Server Programs"* and *"Awareness on Digital Library Soft wares*" were taken up for the study. 34% of LIS professionals indicated that they do not posses any skill on *"Server Program"* and 19.1% indicated that they are *"Learning"*. In the case of "Digital Library software", 55.3% indicated that they are "familiar" and "Proficient". "Books" and "Library Seminars" are important resources for "Mode of Learning".

Fair amount of awareness can be seen in the case of *"Standards Organization"* (63.8%) whereas in the case of *"Digital library standards"(55.3%) and "RDF Standards" (70.2%)* indicated either "No skill" or "Learning". More than 60% of LIS Professionals depends on the resources such as "Books" and "Library Seminars" for gaining awareness on standards.

8. Level of awareness

The levels of awareness of the conceptual factors on digital library have been further compared with the designation and the years of experience. The comparison based on the designation is shown in table-2.

TABLE - II

LEVEL OF AWARENESS ON CONCEPTUAL FACTORS OF DIGITAL LIBRARY VS. DESIGNATION

Group	S.No	Description	Librarian (N=33)				Asst. Librarian (N=14)			
			NS	L	F	P	NS	L	F	P
Storage	1	Awareness on Storage Devices	3 (6.4)	6 (12.8)	22 (46.8)	2 (4.3)	0 (0.0)	2 (4.3)	12 (25.5)	0 (0.0)
	2	Awareness in Digital Storage	0 (0.0)	8 (17.0)	5 (10.6)	20 (42.6)	2 (4.3)	0 (0.0)	10 (21.3)	2 (4.3)
	3	Awareness in Digital Storage Security	2 (4.3)	9 (19.1)	11 (23.4)	11 (23.4)	0 (0.0)	5 (10.6)	0 (0.0)	5 (10.6)
Format	4	Awareness in Graphic/ Audio Formats	3 (6.4)	8 (17.0)	11 (23.4)	11 (23.4)	2 (4.3)	7 (14.9)	0 (0.0)	5 (10.6)
	5	Awareness in Moving Image formats	0 (0.0)	9 (19.1)	16 (34.0)	8 (17.0)	5 (10.6)	9 (19.1)	23 (48.9)	10 (21.3)
	6	Awareness in Metadata	16 (34.0)	14 (29.8)	3 (6.4)	0 (0.0)	5 (10.6)	7 (14.9)	2 (4.3)	0 (0.0)
Software	7	Awareness in Server Programs	11 (23.4)	9 (19.1)	11 (23.4)	2 (4.3)	5 (10.6)	0 (0.0)	2 (4.3)	7 (14.9)
	8	Awareness in Digital Library Soft wares	0 (0.0)	12 (25.5)	9 (19.1)	12 (25.5)	4 (8.5)	5 (10.6)	0 (0.0)	5 (10.6)
	9	Awareness in Metadata Standards	10 (21.3)	8 (17.0)	9 (19.1)	6 (12.8)	1 (2.1)	2 (4.3)	10 (21.3)	1 (2.1)
Standards	10	Awareness in RDF Standards	6 (12.8)	15 (31.9)	11 (23.4)	1 (2.1)	5 (10.6)	7 (14.9)	0 (0.0)	2 (4.3)
	11	Awareness in Digital Library Standards	11 (23.4)	15 (31.9)	2 (4.3)	5 (10.6)	0 (0.0)	0 (0.0)	14 (29.8)	0 (0.0)
	12	Awareness about Standards Organization	2 (4.3)	3 (6.4)	26 (55.3)	2 (4.3)	7 (14.9)	5 (10.6)	1 (2.1)	1 (2.1)

NS – No Skill; L – Learning; F – Familiar; P – Proficient

9. Conclusion

Digital Library is the electronic library, which the information is stored in the digital form. With the advancement and new technology in the field of librarians and information professional must acquire the new skills as networking and web based technologies. DL requires careful planning and development if they are to be achievable in terms of real-time information requirement. There are numerous approaches to make the digital library more accurate and real-time including application of various natures In Multi-Disciplinary Knowledge and Skills are required if information professionals have to survive. Digital Library system includes applying various techniques and methods to improve visual presentation, availability, behaviour and location of items/products and services can be effective only if the Library and Information professionals has considerable knowledge and inquisitive for learning the developments that are taking place every day in the domain.

References

1. SrivastavaRachna and SaxenaShalini. " Digital Libraries – Dream or Reality?" SRELS Journal of Information and management 41.4 (2002).
2. Hewitson, A. "Use and awareness of electronic information services by academic staff at Leeds Metropolitan University – a qualitative study", Journal of Librarianship and Information Science 34.1 (2002): 43-52.
3. Fox, Edward A.et,al "Digital Libraries". Communications of ACM 38.4(1995): 24-34.
4. Cleveland, Gart. "Digital Libraries: Definition, Issues and Challenges", UDT Occasional paper No.8(1998).
5. Fuhr, N., Hansen, P.,Mabe, M.,Micsik, A., & Solvberg, I. „Digital libraries: A generic classification and evaluation scheme" In Proceedings of the European Conference on Digital Libraries. Heidelberg: Springer.(2001):187–199
6. Tsakonas, G., Kapidakis, S., & Papatheodorou, C. "Evaluation of user interaction in digital libraries" In: M. Agosti, & N. F. e. (Eds), Notes of the DELOS WP7 Workshop on the Evaluation of Digital Libraries.(2004).
7. Gonc¸ alves, M. A., Panchanathan, G., Ravindranathan, U., Krowne, A., Fox, E. A., Jagodzinski, F., et al. "The XML log standard for digital libraries:Analysis, evolution, and deployment" In Proceedings of the 3rd ACM/IEEE-CS Joint Conference on Digital Libraries. Houston, Texas: IEEE Computer Society. (2003): 312–314.
8. Klas, C.-P., Fuhr,N., Kriewel, S., Albrechtsen, H., Tsakonas, G., Kapidakis, S., et al. "An experimental framework for comparative digital library evaluation: The logging scheme". In Proceedings of the 6th ACM/IEEE-CS Joint Conference on Digital Libraries Chapel Hill, NC, USA.(2006) :308–309.

Use of Social Media by the Students of Mahila Mahavidyalaya Banaras Hindu University, Varanasi

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Abstract

Using of social media among Indian College students has grown significantly and certainly has an impact on academic activities and other routine activities. The aim of the study is to examine the use of social media among the undergraduate students of Mahila Mahavidyalaya, Banaras Hindu University, Varanasi. Questionnaires were used to collect the data from a representative sample of 150 students who were selected via random sampling techniques. The collected data was analysed according to objective of the study and used different statistical methods. It is found that that all of the sampled undergraduate students are aware about social media; they were using at least one form of social networking website to interact with friends, connecting to their class mates for online study and for discussing academic issues, sharing multimedia content and watching movies etc. Facebook and Whatsapp are the commonly used social media among the students and they use this for friendly communication. There are also much of the benefits of using social media and dangers associated with social media which are discussed. It was recommended that college authorities should organize seminars to draw the attention of students on the good aspects of social media etc. Some useful suggestions for further research were made.

Keywords

Social Media, Undergraduate Students, Social Networking Sites Usage Pattern.

1. Introduction

Over the past 20 years, the world in general and India in particular has been significant changes in information technology (IT). IT has led to Social Media, This technology originally designed to move data and information from one location to another in a reliably and efficiently. So social media are now used regularly million people. People use social media such as Facebook, Whatsapp to crates connection with others. The success and popularity of social media shows that idea of online sharing of information. The usage of social media has been increased and has caught the attention of academics worldwide. Many Social science researchers are now being investigated in social media. Because of the impact of social media in society, it has left a big impact on society in general and college students in particular.

The term Social Media has been defined by different authors in several ways. It is a modern interactive communication channels through which people connect to one another, share ideas, experiences, pictures, messages and information of interest. Boyd and Ellison (2007) define Social Media: "Web based services that allow individuals to construct a Public or semi-public profile within abounded system (2) articulate a list of other users with whom they share a connection and (3) view and traverse their list of connections and those made by others within the system." Compare to any other age groups of people college students are more interested in using social media. In the category of users of social media the majority are college youth. In India this fact is acknowledged by the various studies and hence today the usage of social media has become large part of the student's. Hence, the study is aimed at conducting exploratory study on the usage pattern of social media by the students of Mahila Mahavidyalaya, Banaras Hindu University, and Varanasi.

2. About Mahila Mahavidyalaya, BHU

MMV and Women's college) is a women's college in the Banaras Hindu University, Varanasi, India which offers undergraduate, postgraduate and doctoral courses in various subjects to women. It was founded in 1929 by Mahamana Pandit Madan Mohan Malaviya. Its visionary founder Mahamana Pandit Madan Mohan Malviya foresaw immense significance of women's education and the critical role women would have to play in the development of the country.

3. Review of Literature

In the following review of existing studies on the related topic provide us a base to go ahead in the pursuit of understanding usage pattern of social media by college student. The report of Nicole Ellioson's ECAR studies entitled 'Social Networking Sites' Students and Information Technology (2008) explores how today the importance of social media is increasing. Study aims to find out who uses social media? how they are use?, which social media are used?, hours spent on social media? To what extent do students use the most basic features (Profiles, friends and groups) of social media? It also focuses on disclosing and protection of personal information on social media and highlighting reasons for nonparticipation in social media. In groundbreaking research, Boyd and Ellison (2008) proffered some universal traits inherent in social media. They include constructing a public or semi-public profile within a bounded system, articulating a list of other users with whom participants share a connection, and viewing and traversing their list of connections and those made by others within the system. Social Networking Sites are predominantly for making social connections. But some, like LinkedIn, are intended strictly for business and professional purposes. Madge, Meek, Wellens & Hooley (2009) conducted online survey among first year students of a British university. The findings showed that Facebook is mainly used as a ‘social glue’ that helped these students to settle into their university life and the students mainly thought of Facebook use for social reasons and not only for formal teaching purposes; the students did sometimes use it for informal learning purposes such as the micro management of their life.

4. Objectives

The general purpose of the study is to find out the various Social Media are using by undergraduate students of the Mahila Mahavidyalaya, Banaras Hindu University, and Varanasi. The specific purposes of the study are as follow:

1.To examine the purpose of the usage of Social Media by Mahila Mahavidyalaya undergraduates.
2. To examine the various categories of Social Media using by Mahila Mahavidyalaya undergraduates.
3. To identify the frequency of use of social networking sites.
4. To determine the duration of access of the social networking sites.
5. To determine the content likely to share through social media.
6. To determine the benefits of using social networking sites.
7. To identify the dangers associated with social network sites.

5. Scope

Geographical scope: this study is limited to the use of Social Media by undergraduate students of Mahila Mahavidyalaya, Banaras Hindu University.

6. Methodology

A survey has been conducted among 150 respondents between age group of 18 to 22 were randomly selected. The age group of 18-22 was chosen since they are the heavy users of social media and also early adopters of advanced technological applications. The surveys were done by circulating questionnaires and also some of the data were collected through interview. This research also involves observation-both direct and participatory method, where direct observation was made with the students, their peers and friends which helped knowing some of the facts related to the study.

7. Data Analysis and Presentation

This chapter deals with the analysis of data collected from the field. They are presented according to objectives.

Research Questions One: What are the purposes for using social media?

The Social Media provide various benefits to college students. They can establish their presence in the community through social media and thereby they get good communication with each other. The students were asked to indicate different purpose of use of social media and it is discussed in the table 1.

Table 1: Purpose of Use of social media

Sl. No.	**Purpose of Use of Social Media**	Respondents
1.	For communicating and interacting with friends	42 (28%)
2.	For discussing/sharing ideas/news/events	41 (27 %)
3.	For finding and meeting new people	40 (26%)
4.	For online learning and getting study materials online and share.	30 (20%)
5.	For keeping up to date	15 (10%)
6.	For entertainment/watching movies.	38 (25%)
7.	For private messaging/uploading Photos/online profiles.	39 (26%)

Table 1 illustrates that majority of the 42(28%) and 41(27.33%) students use social media for communicating and interacting with friends and discussing/sharing ideas/news/events. 40 (26%) treated social media as a way to find and connect new friends and relatives. A good number 39(26%) and 38 (25.33%) of students use social media for private messaging/uploading photos/online profiles and for entertainment/watching movies. 30 (20%) Students can find relevant materials for their academic purpose and also they can publish their social ideas through social media. Keeping update is another benefit of social media but a few 15 (10%) respondents use social media for that.

Research Questions two: what are the various categories of social media and there uses?
Out of the different social media each user has his/her own interest of selecting particular social media. Here social media are listed according to the top ranking authorized site.

Table 2: Various categories of social media and there uses

Sr. No.	Social Media	Respondents	
1.	Facebook	138	(92%)
2.	Twitter	39	(26%)
3.	Whatsapp	103	(69%)
4.	Google+	78	(52%)
5.	My space	12	(8%)
6.	Frienster		0
7.	Linkedin	62	(41%)
8.	Yahoo	57	(38%)
9.	You Tube	89	(59%)
10.	Instagram	15	(10%)
11.	Flicker		0
12.	My Life	3	(2%)

Table no.2 reveals that Facebook is the most widely used i.e. 138 (92%) among the students. A good number 103 (69%) of respondents mention Whatsapp is the secondly used social media. YouTube and Google+ were used by 89 (59%) and 78 (52%) respectively. LinkedIn 62 (41%) and Yahoo 57 (38%) are also usable social media among students. Very few respondents were used Twitter, My space, Instagram, and My life. Friendster and Flicker were never used by the respondents.

Research Question Three:- How frequent do you use the social media?

For different purposes respondents use social media at different frequency. Some of them visited these sites every day and some others once a week. To the students were asked how often they visit social media.

Table No. 3 Frequency of Use of social media?

Frequency	Respondents
Everyday	85 (57%)
Weekly	21 (14%)
Twice in a week	26 (17%)
Occasionally	18 (12%)

From table no. 3 it is evident that majority 57% of students were using social media every day. It is because of Internet packages provided by the mobile companies is available at a very low cost. A few 17% of the students used social media twice in a week and a very few 14% of the students were using social media weekly.

Research Question Four:- How much time do you spend on social media?

Duration of time sometimes depend upon the depth of searching of information and availability of time. Spending too much time on Social Media for posting entries and comments may affect the academic productivity of students negatively. But searching information and sharing academic ideas it may be good for their study

Table No. 4. Duration of Access.

Duration	Respondents
Less than one hour	49 (33%)
1-2 hours	78 (52%)
2-4 hours	23 (15%)
More than four hours	0

From table 4 it is clear that 78 (52%) of students were using social media one to two hours per day. 49 (33%) of students were using social media less than one hour and few i. e. 23 (15%) used two to four hours and per day. No one is using social media more than four hours.

Research Question Five:- Which content do you like to share through social media?

Social Media provide attractive content features for their users. Students prefer various types of content to share according to their interest. Content may be videos/audios, pictures, personal profiles, personal blogs, stories etc. Here to students were asked to mention contents they likely to share through social media responses are summarized in the table 6.

Table 5: Contents likely to share.

Content	**Respondents**
Videos/Audios	96 (64%)
Pictures	72 (48%)
Personal Profiles	72 (48%)
Personal Blogs	25 (17%)
Stories	92 (61%)

Table no.5 shows that 64% of the respondents likely to share videos/audios. A good number 61% of respondents mention that they share mainly stories and 48% respondents likely to share pictures and personal profiles respectively. Few students i.e. 17% prefer blogs.

Research Question Six:- What are the benefits do you fell by using social media?

There are different benefits of using social networking sites: it helps in learning, encourages information searching, virtual meeting with classmates and also with teachers; self-esteem and well-being; strengthening interpersonal relationship; improve read and write web skills etc.

Table No. 6 Benefits of using social media?

Benefits	**Respondents**
It helps in learning.	69 (46%)
It helps in strengthening interpersonal relationships.	52 (35%)
It promote read and write web skills.	48 (32%)
Encourages information searching	75 (50%)
It increases self-esteem and well-being.	55 (37%)
It encourages virtual meeting with classmates and teachers	112 (75%)

From table no. 6 discussion shows that the majority 112 respondents accepted that social media encourages virtual meeting with classmates and teachers. 75 and 69 students said that it encourages information searching and learning. 55 said that social media increases self-esteem and well-being. And few 48 were accepting that social media promote read and write web skills.

Research Question Six:- Which dangers do you feel that are associated with the social media?
Social Media have caused some problems for their users, individuals, families, groups and students like E-crime, Internet addiction, laziness, standard crime like, fraud, murder, kidnapping; Immoral act like, pornography, prostitution, cyber-bullying where identified. Students fell that the following dangers are associated with social media.

Table No. 7 Reponses on the dangers associated with social media?

Sr. No.	**Dangers**	**Respondents**
1	E-crime e.g. identity theft, theft of valuable data, financial loss.	113 (75%)
2	Laziness	125 (83%)
3	Cyberbullying/ cyberstalking	42(28%)
4	Standard crime e. g. fraud, murder, kidnapping	63(42%)
5	Immoral act e.g. Pornography, prostitution	26(17%)
6	Misuse of Personal Information	89 (59%)
7	Waste of time	96 (64%)

Table 7 revels that the Laziness 83% and E-crime 75% are most acceptable danger associated with social media. 64% students said that use of social media is waste of time. 59% felt danger that the misuse of personal information. Remaining 28% and 17% respondents said that cyberbullying/cyberstalking and immoral acts are the dangers associated with social networking sites.

8. Conclusion

The results obtained from this study have shown that a reasonable number of students Mahila Mahavidyalaya, Banaras Hindu University, Varanasi undergraduate students use the social networking sites. Facebook and Whatsapp have emerged the most popular social media’s and have contained to grow in popularity. There are various purposes for which the students use the Social Media to achieve and that have been investigated. The popularity of the social networking usage by the students and the benefits it has on the student – users have been confirmed from this study. From the results of the study the researcher sees the reason why a famous media scholar argued that technology can be used in ways beneficial and otherwise. Technology is a double-edged sword. Its power for bad and good resides in the users Baran (2010). Therefore the students of the Mahila Mahavidyalaya, Banaras Hindu University, Varanasi are aware of the danger and risk involved in these social media is positive indicator that students are not only techno savvy and socially active through Social Media but they also possess social consciousness. Study makes an important contribution in understanding college students' use of social media its effect to communication and self-concept.

References

1. Baran, S.J. (2010). Introduction to mass communication: media literacy and culture (6th ed.), New York: McGraw-Hill.
2. Bellarmine, A. E. (2013). College Students' Use of Social Media: Site Preferences, Uses and Gratifications Theory Revisited. International Journal of Business and Social Science, 4.
3. Boyd, D. M., & Ellison, N. B. (2008). Social network sites: definition, history, and scholarship. Journal of Computer-Mediated Communication, 13, 210-230.
4. Ellioson, N., (2008). Social Networking Sites. ECAR Research Study. Students and Information Technology, 81-98.
5. Helen, N. Eke, M., Charles, O. O., Jennifer, N. O. (2014). The Use of Social Mediaamong the Undergraduate Students of University of Nigeria, Nsukka. Library Philosophy and Practice (e-journal), Paper 1195. (Online) Available: http://digitalcommons.unl.edu/libphilprac/1195 (25-2-2016).

Cloud Computing and Its Use in Libraries

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Abstract

Cloud computing is a new technology model for IT services which many businesses and organizations are adopting. It allows them to avoid locally hosting multiple servers and equipment and constantly dealing with hardware failure, software installs, upgrades and compatibility issues. For many organizations, cloud computing can simplify processes and save time and money. This article defines cloud computing and shows how it is different from other types of computing. It also discusses how cloud computing solutions could be beneficial to libraries in the areas: technology, data.

Keywords

Cloud computing, Libraries, IT, Cloud storage, IT Services, Data storage

1. Introduction

Cloud computing can transform the way systems are built and services delivered, providing libraries with an opportunity to extend their impact Cloud computing has become a major topic of discussion and debate for any business or organization which relies on technology. Anyone connected to the Internet is probably using some type of cloud computing on a regular basis. Whether they are using Google's Gmail, organizing photos on Flickr or searching the Web with Bing they are engaged in cloud computing. As Geoffrey Moore points out, the interesting thing about cloud computing is it did not start as a technology for the business enterprise, but was driven by the public with services like Facebook and Flickr[i]. Over the last few years businesses have started to see the value of cloud computing causing it to become a major technology solution for businesses and organizations around the world. Looking across the information and broader technology landscape, it is not difficult to find success stories of switching to cloud computing, disaster stories, and a great deal of debate about what cloud computing is, or isn't. The purpose of this article is to look specifically at how cloud computing can be employed by libraries and what needs to be considered before moving into a cloud computing solution.

2. What is Cloud Computing?

First there must be a definition of cloud computing for this discussion. The Gartner Group defines cloud computing as "a style of computing in which massively scalable and elastic IT-enabled capabilities are delivered as a service to external customers using Internet technologies" [ii]. In various presentations KPMG breaks this into essentially four different types of cloud computing: infrastructure, platform, applications and services. To put this in more concrete terms, examples of each can be:

Type	What is it	Examples
Infrastructure	Buying space / time on external servers	Amazon A3 Bungee
Platform	An existing software platform to build your own applications on	Facebook
Applications	Software applications accessed with a Web browser	Google Docs Salesforce.com
Service	Ready to use services accessed with a Web browser	ADP

The above table illustrates why there are varying definitions of cloud computing. Many cloud services actually incorporate two or more of these types. For example, Google docs provide infrastructure as well as applications. It should also be noted that many cloud applications and services are actually using another providers' cloud infrastructure to run their service, which will be touched on later in this article.

3. Characteristics of Cloud Computing:

1. Self-Healing: Any application or any service running in a cloud computing environment has the property of self-healing. In case of failure of the application, there is always a hot backup of the application ready to take over without disruption. There are multiple copies of the same application - each copy updating itself regularly so that at times of failure there is at least one copy of the application which can take over without even the slightest change in its running state.
2. Multi-tenancy: With cloud computing, any application supports multi-tenancy - that is multiple tenants at the same instant of time. The system allows several customers to share the infrastructure allotted to them without any of them being aware of the sharing. This is done by virtualizing the servers on the available machine pool and then allotting the servers to multiple users. This is done in such a way that the privacy of the users or the security of their data is not compromised.
3. Linearly Scalable: Cloud computing services are linearly scalable. The system is able to break down the workloads into pieces and service it across the infrastructure. An exact idea of linear scalability can be obtained from the fact that if one server is able to process say 1000 transactions per second, then two servers can process 2000 transactions per second.
4. Service-oriented: Cloud computing systems are all service oriented - i.e. the systems are such that they are created out of other discrete services. Many such discrete services which are independent of each other are combined together to form this service. This

allows re-use of the different services that are available and that are being created. Using the services that were just created, other such services can be created.

5. SLA Driven: Usually businesses have agreements on the amount of services. Scalability and availability issues cause clients to break these agreements. But cloud computing services are SLA driven such that when the system experiences peaks of load, it will automatically adjust itself so as to comply with the service-level agreements. These services will create additional instances of the applications on more servers so that the load can be easily managed.
6. Virtualized: The applications in cloud computing are fully decoupled from the underlying hardware. The cloud computing environment is a fully virtualized environment.
7. Flexible: Another feature of the cloud computing services is that they are flexible. They can be used to serve a large variety of workload types - varying from small loads of a small consumer application to very heavy loads of a commercial application.

4. Types of Cloud Computing

1. *Software as s service (SaaS):* Software package such as CRM or CAD/CAM can be accessed under cloud computing scheme. Here a customer upon registration is allowed to use software accessible through net and use it for his or his business process. The related data and work may be stored on local machines or with the service providers. SaaS services may be available on rental basis or on per use basis.
2. *Platform as a Service (PaaS):* Cloud vendors are companies that offer cloud computing services and products. One of the services that they provide is called PaaS. Under this a computing platform such as operating system is provided to a customer or end user on a monthly rental basis. Some of the major cloud computing vendor is Amazon, Microsoft, and Google etc.
3. *Infrastructure as a service (IaaS):* The cloud computing vendors offer infrastructure as a service. One may avail hardware services such as processors, memory, networks etc. on agreed basis for specific duration and price.

5. Working of Cloud Computing

Cloud computing system can be divided it into two sections: the front end and the back end. They connect to each other through a network, usually the Internet. The front end is the side the computer user, or client, sees. The back end is the "cloud" section of the system. On the back end there are various computers, servers and data storage systems that create the "cloud" of computing services. A central server administers the system, monitoring traffic and client demands to ensure everything runs smoothly. It follows a set of rules called protocols Servers and remote computers do most of the work and store the data.

6. Advantages of Cloud Computing in Libraries

1. Cost saving
2. Flexibility and innovation
3. User centric
4. Openness
5. Transparency
6. Interoperability
7. Representation
8. Availability anytime anywhere
9. Connect and Converse
10. Create and collaborate

7. Examples of Cloud Libraries

1. OCLC
2. Library of Congress (LC)
3. Exlibris
4. Polaris.
5. Scribd
6. Discovery Service
7. Google Docs / Google Scholar
8. Worldcat
9. Encore

8. What can Cloud Computing Solutions do for Libraries?

So turning to cloud computing and libraries, are their real problems that can be solved? The answer is yes. The library community can apply the concept of cloud computing to amplify the power of cooperation and to build a significant, unified presence on the Web. This approach to computing can help libraries save time and money while simplifying workflows. A brief list of potential areas of improvement could include:

1. Most of the library computer systems are built on pre-Web technology
2. Systems distributed across the Net using pre-Web technology are harder and more costly to integrate.
3. Libraries store and maintain much of the same data hundreds and thousands of times.
4. With library data scatter across distributed systems the library's Web presence is weakened.
5. With libraries running independent systems collaboration between libraries is made difficult and expensive.

6. Information seekers work in common Web environments and distributed systems make it difficult to get the library into their workflow.
7. Many systems are only used to 10% of their capacity. Combining systems into a cloud environment reduces the carbon footprints, making libraries greener.

These improvements can be grouped into three basic areas: technology, data and community. Each offers some general and some unique opportunities for libraries. Looking first at the technology that most current library systems employ several benefits of cloud computing solutions surface.

9. Technology Improvements

Cloud computing solutions at their essence are built on current technology and should be architected to allow for technology shifts. Looking at the explosion of mobile devices one sees how businesses and organizations operating in a cloud environment are able to adapt and deliver their services to the new devices much more quickly and less expensively. The mainstay of libraries is the library management system (LMS, also known as the integrated library system or ILS). Library management systems were developed before the Internet and Web existed and are generally closed proprietary systems. It has been difficult and costly for these closed systems to take advantage of new technologies as they emerge. It is also challenging to integrate to external systems and libraries must rely on their vendors to do any such integration. Over time libraries have needed to add more systems to manage their changing collections which moved from strictly physical collection management to a combination of physical, licensed and digital collections. Since each of these systems has stood alone integrating them has been difficult and at times not possible. What can change in a cloud environment for managing core library services? First would be the possibility of open service oriented architecture. Many cloud solutions offer this type of openness with published application program interfaces (APIs) that any programmer can take advantage of. This means if a new service or technology emerges libraries will not always be dependent on a vendor or other third party to start taking advantage of these services and technologies. Existing library systems have used APIs to connect to external services but they have remained closed proprietary systems making it hard to integrate them into external services. As Andrew Pace stated it, "… demands fall short by merely asking that local systems avail themselves of other Web services rather than establishing themselves as services in their own right "[iii]. When library systems are deployed as open cloud solutions then the library community itself can step up to create extensions to their core services and more importantly share them throughout the community using cloud solutions. This makes it possible to integrate two services once and re-use it across the community. Secondly libraries can get out of the business of technology and focus on collection building, patron services and innovation. Servers can be decommissioned and no longer require replacement every five years (or less). Staff no longer has to maintain the complex software stack necessary to run local systems and worry about compatibility of the stack during upgrades. Instead technical skills can be re-deployed for extending cloud services into their environment and their environment into other cloud services.

10. Data Efficiencies

When data is stored in the cloud it offers several advantages. Common data can now be easily shared among services and users. The need for local storage, maintenance and backups is removed. Agreements can be forged to share data that normally would be considered private to a single business or organization. And finally libraries can achieve Web scale when they massively aggregate data and users, something a cloud environment makes possible. Like the advantages of technology deployed and accessed as cloud solutions, data storage in the cloud brings many benefits for libraries. The easy one to recognize is the same data being stored hundreds and thousands of times across libraries. Consider how many copies of the cataloging data there are for a serial publication such as the Economist. And if a change is needed to the cataloging data to keep it current each library must perform that change. When this data is maintained in the cloud, maintenance and backup of this data is now done once and if a change is needed, once one library performs the change all share it. Another great benefit of data stored in the cloud is the opportunity for collaboration and cooperative intelligence. Libraries can agree to share pools of data for cooperative collection building, cooperative preservation or digitization, cooperative sharing of materials, etc. And with massively aggregated data new services can be created such as recommender services based on a broad base of usage data. As stated above when library data is widely distributed across systems it makes library Web presence weak. When search engines such as Google, Yahoo and Bing can harvest from large data stores it opens the opportunity for the collective to work on search engine optimization, or the improvement of library collections appearing more relevant to search engines thus displayed higher in search results. This is a complex and ever changing task that would be prohibitive for individual libraries to accomplish. Further, aggregated data can attract a much larger aggregation of users who interact with the data, add to it and re-use it. The result is every user adds benefit for every other user.

11. Conclusion

Libraries have the opportunity to improve their services and relevance in today’s information society. Cloud computing is one avenue for this move into the future. It can bring several benefits for libraries and give them a different future. The cooperative effect of libraries using the same, shared hardware, services and data— rather than hosting hardware and software on behalf of individual libraries—can result in lowering the total costs of managing library collections and enhancing the both library user’s experience and library staff workflows. While local library systems served an important purpose earlier in library automation they now represent a tremendous duplication of effort. Each library builds and maintains a database, buys equipment and installs and updates the software. In fact, some libraries can. With cloud computing, all of this is taken care of transparently for the library and user. Among the benefits of a cloud computing approach:

- Take advantage of current and rapidly emerging technology to fully participate in the Web’s information landscape.
- Increased visibility and accessibility of collections.
- Reduced duplication of effort from networked technical services and collection management.

- Streamlined workflows, optimized to fully benefit from network participation.
- Cooperative intelligence and improved service levels enabled by the large-scale aggregation of usage data.
- Make libraries greener by sharing computing power thus reducing carbon footprints.

The vision is to use cloud computing to deliver library resources, services and expertise at the point of need, within user workflows and in a manner that users want and understand. It should free libraries from managing technology so they can focus on collection building, improved services and innovation. The cloud computing model will encourage libraries and their users to participate in a network and community of libraries by enabling them to reuse information and socialize around information. It can also create a powerful, un[i]fied presence for libraries on the Web and give users a local, group and global reach.

References

1. Gartner Group: http://www.gartner.com/it/page.jsp?id=1035013
2. Moore, Geoffrey: Core Content and the Cloud. http://www.youtube.com/watch?v=0swJCYLH2C
3. Pace, Andrew: 21st Century Library Systems. In: Journal of Library Administration 49 (2009) S. 641-650

Development of E-Resources in Academic Libraries

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Abstract

Library automation has helped libraries to provide improved access to their collections. Libraries can be development of digital libraries, corporate cataloging, acquisition, storages and sharing the resources on virtual environment on the web. A library collection may include books, magazines, journals, video and audio media, and maps. The flexibility of digital technology allows it to handle new kinds of objects efficiently. Many libraries have to reduce their acquisition of books as well as their journal subscriptions. Documents in electronic form can become more available and widely used because the cost of digital storage and processing is going down. The implementation of the decision must be consist of several issues like the management and creation of e-resources, the techniques, and methods that need to be understood and used for the said purpose. The design, creation, implementation and maintenance of e-information resources in an academic library is not so easy task. In an academic library, many sections need to be updated with recent tool and techniques for creating e-resources. The new emerging techniques like open source software and its concerned hardware systems needed to build the digital library.

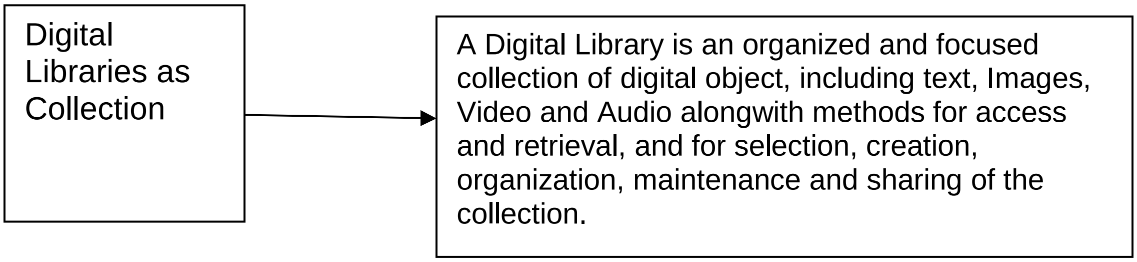
Keywords

E-Resources-Libraries, Academic Library, Automation, Digital Library

1. Introduction

Libraries have traditionally dealt with the organization and provision of access to physical material like print on-paper publications. Library automation has helped libraries to provide improved access to their collections. However, online access has largely been limited to the computerized library catalogue (OPAC). Digital libraries differ significantly from such libraries because they allow users to gain online access to and work with electronic versions of full text documents and their associated images. Many digital libraries also provide access to other multimedia content like audio and video.

A digital library as “a collection of digital documents (or objects)” is a dominant perception today.



Digital Libraries as Collection

A Digital Library is an organized and focused collection of digital object, including text, Images, Video and Audio alongwith methods for access and retrieval, and for selection, creation, organization, maintenance and sharing of the collection.

Though the focus of this definition is on the document collection, it stresses the fact that digital libraries are much more than a random assembly of digital objects. They retain several qualities of traditional libraries such as a defined community of users, focused collections, long term availability, the possibility of selecting, organizing, preserving, and sharing resources. This viewpoint matches with the prevailing interest in the development of one-off, relatively static or special digital library collections.

2. Benefits of digital libraries:

Digital libraries bring significant benefits to the users. The following are major benefits of digital libraries.

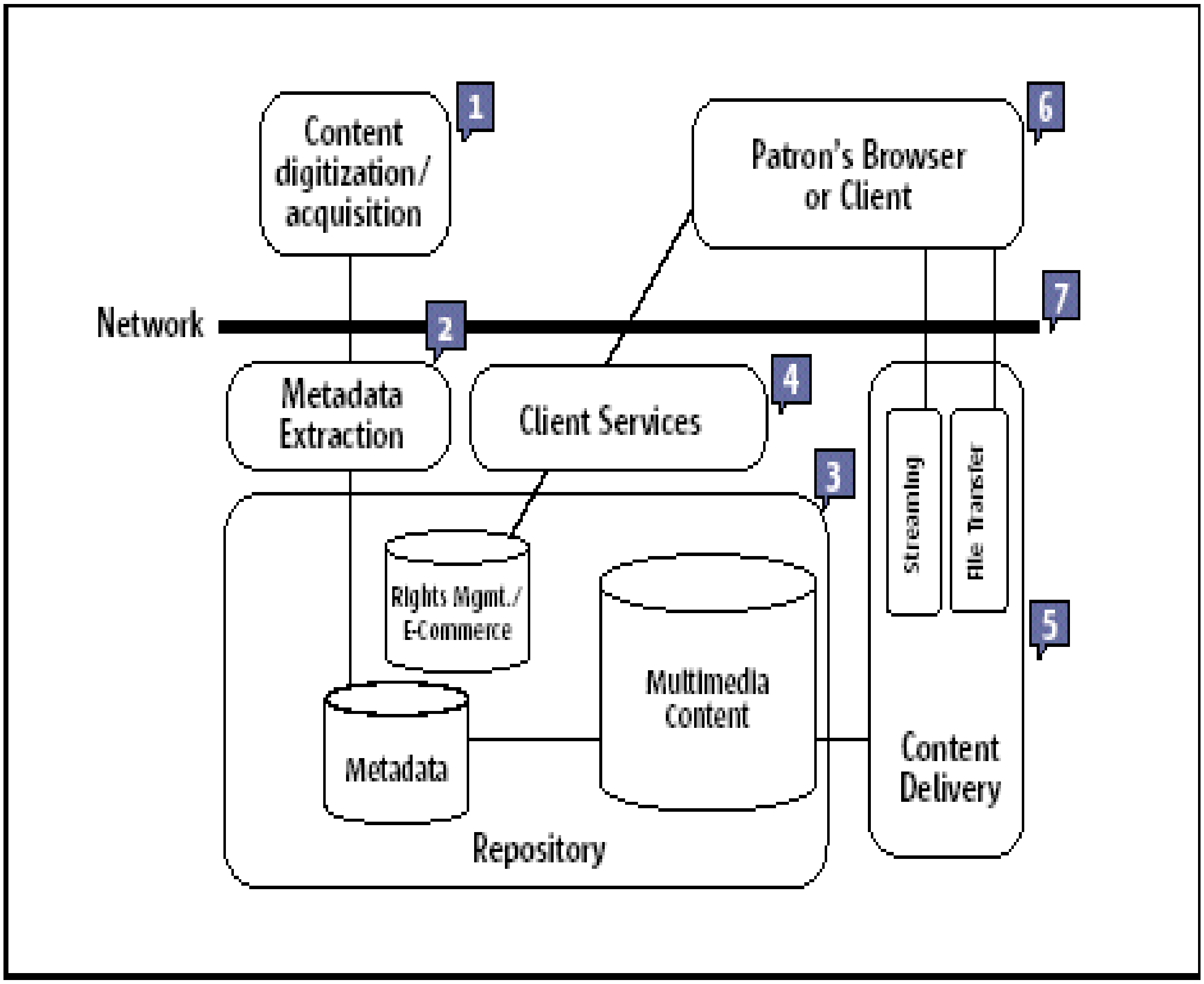
- Always available
- Improved access
- Wider access
- New forms of access
- Improved information sharing
- Improved preservation

3. Functional components in digital library:

As can be seen in figure 1, a fully developed digital library environment involves the following elements:

1. Initial conversion of content from physical to digital form.
2. The extraction or creation of metadata or indexing information describing the content to facilitate searching and discovery, as well as administrative and structural metadata to assist in object viewing, management, and preservation.
3. Storage of digital content and metadata in an appropriate multimedia repository. The repository will include rights management capabilities to enforce intellectual property rights, if required. E-commerce functionality may also be present if needed to handle accounting and billing.
4. Client services for the browser, including repository querying and workflow.
5. Content delivery via file transfer or streaming media.
6. Patron access through a browser or dedicated client.
7. A private or public network.

Figure 1: Functional components of a Digital Libraries



4. **Digitization of library collection or digital production**:

Digitization is quite simply the creation of a computerized representation of a printed analog. There are many methods of digitizing and varied media to be digitized. However, here we are concerned with the creation of electronic texts, it will focus primarily on text and images, as these are the main objects in the digitization process at CML.

5. **Hardware — types of scanner and digital cameras:**

There are quite a few methods of image capture that are used within the educational community. The equipment ranges from scanners (flatbed, sheet fed, drum, slide, microfilm) to high-end digital cameras, manual book scanners and even robot book scanners. In terms of standards within the digitizing community, the results are less than satisfactory. Projects tend to choose the most available option, or the one that is affordable on limited grant funding. However, two of the most common and accessible image capture solutions are flatbed scanners, book scanners, high-resolution digital cameras and robot book scanners.

6. Metadata:

Metadata is informally defined as "information about information" or any data associated with a resource that describes that particular resource. A more general definition that is useful for institutions is "structured information about any information resource of any media type or format. In this context, an information object is anything that can be addressed and manipulated by a human or a system as a discrete entity. The essential aspect of a metadata system that describes an object, then, is its ability to provide a structured format for information about that object.

The creation of metadata for digital resources is an important part of any DL project and must be incorporated into a project's workflow. Metadata should be created and associated with the digital resource to support the discovery, use, management, reusability, and sustainability of that resource. Metadata relating to digital resources is most often divided into five conceptual types (with some overlap among the five):

Descriptive metadata: information used for the indexing, discovery, and identification of a digital resource.

Analytical metadata: information about the subject and context of a digital resource.

Structural metadata: information used to display and navigate a digital resource; also includes information on the internal organization of the digital resource. Structural metadata might include information such as the structural divisions of a resource (i.e., chapters in a book) or sub-object relationships (such as individual diary entries in a diary section).

Administrative metadata: information needed for the management of the digital resource, which includes information regarding access, display, rights management.

Preservation metadata: information about the digital image for preservation purposes, including the resolution at which the images were scanned, the hardware/software used to produce the image, compression information, pixel dimensions, etc., important for migration and long-term sustainability of the digital resource. This can also be referred to as technical metadata.

Metadata for digital resources needs to provide information that:
- certifies the authenticity and degree of completeness of the content;
- establishes and documents the context of the content;
- identifies and exploits the structural relationships that exist between and within information objects;
- provides a range of intellectual access points for an increasingly diverse range of users;
- provides some of the information that an information professional might have provided in a physical reference or research setting;
  provides information about the digital resource to the information professional to aid in the resource's sustainability.

7. Digital preservation:

Institutions by their very nature think long-term, and preservation of digital material has emerged as a major concern in the educational community. It is necessary that digital objects created remain accessible for as long as possible both to for intended users and the wider community. DL projects are costly and time consuming and the digitization process can subject original materials to potentially damaging light and handling.

More than any other aspect of a DL project, digital preservation, by its very nature, requires vigilance on the part of information professionals. Digital preservation is a new and developing field. Information professionals must monitor research being conducted in the fast-paced world of digital technology. In addition, the issues surrounding the preservation of digital objects are of a more immediate imperative than traditional materials. This is due to the lack of stability in digital storage media and the necessary equipment required interpreting and accessing digital materials. Here seeks to equip one with the ability to do both. It introduces the challenges of digital preservation and provides information and recommendations to guide the decision making for digital preservation strategies.

8. Digital preservation challenges:

At its most fundamental level, digital material is comprised of ones and zeros. Software programs are written to create and interpret this binary structure into a variety of forms that we use be they images, text documents, databases, video, sound files or a combination of those formats. Without appropriate tools, even the most simplistic of these are impossible to decipher. Consider the variety of computer hardware and software available readily and how fast popular computers and programs become obsolete.

9. Conclusion:

Development of e-resources or Building Digital Library using certain Open Source Software at academic institutions may consider some depth issues surrounding the creation of a digital library. Building digital library raises a large number of questions which have to be ensured to solve before the decision is to be taken regarding the creation of e-resources to build a digital library. The discussions should be made with in the authorities of the library having experts. Based on the discussions, the decision for developing the e-resources should be made. The implementation of the decision must be consist of several issues like the management and creation of e-resources, the techniques, and methods that need to be understood and used for the said purpose. The design, creation, implementation and maintenance of e-information resources in an academic library is not so easy task. In an academic library, many sections need to be updated with recent tool and techniques for creating e-resources. The new emerging techniques like open source software and its concerned hardware systems needed to build the digital library. For this, readers' orientation is also necessary.

References

1. University of Hong Kong Libraries – Electronic Resources Collection Development Policy, (nd), Viewed July 23 2014, http://lib.hku.hk/cd/policies/erp.html

2. Kovacs, Diane K. and Kara L. Robinson. The Kovacs Guide to Electronic Library Collection Development: Essential Core Subject Collections, Selection Criteria, and Guidelines. New York: Neal-Schuman Publishers, 2004.

3. Gregory, Vicki L. Selecting and Managing Electronic Resources: A How-To-Do-It Manual for Librarians. New York: Neal-Schuman, 2006.

4. Agee, J. (2005), "Collection evaluation: a foundation for collection development", *Collection Building*, Vol. 24 No.3, pp.92-95.

5. Ciszek, M.P., Young, C.L. (2010), "Diversity collection assessment in large academic libraries", *Collection Building*, Vol. 29 No.4, pp.154-161.

6. Cox, J. (2007), "Making sense of e-book usage data", *The Acquisitions Librarian*, Vol. 19 No.3/4, pp.193-212.

Acquisition of E- resources and its Library Services

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Abstract

The article pays a special attention on e-resources which are now demand of modern era and users are also searching required information available on e-resources. It describes the meaning of e-resources and its services in detail. It focuses on the benefits of the electronic resources such as electronic database services, e-books, e-journals, and digital libraries, etc. It throws light on various ways of their acquisition such as acquisition through digitization, through direct subscription and through library consortium. It also focuses on the services of electronic resources useful for users' community by providing online inter library loan, video conferencing and pay per view services. It concludes that the electronic resources are playing a vital role in making the library services effective and fruitful for their end users in true sense.

Keywords

E-resources, Library services, Electronic database, E-books, E-journals

1. Introduction:

Libraries and documentation centres are playing a great role in providing effective library services in order to meet the users' requirements. Users' are in varied nature and their demand are also varied in nature and ever growing. The increasing demand of users' are forcing to the libraries to switch over from print resources to electronic resources. Now Electronic resources have become a demand of modern society because these resources can be accessed widely, and in a speedy manner and thus it saves the time of the users. In this digital era, library is also trying to change its infrastructure in order to satisfy the need of modern user community. This is very much essential for libraries to provide resources in an electronic format which are easily accessible and save the time of users and staff both.

2. E-Resources:

According to Library of Congress "electronic resources is defined as any work encoded and made available for access through the use of a computer. It includes electronic data available by (1) remote access and (2) direct access (fixed media) such as discs/disks, cassettes, hard disks) **[1].** Thus, it can be said that a library can acquire the electronic resources on agreement in case of remote access and a library can own the electronic resources by making the digital version of printed rare books, these and etc.

In the electronic resource services, one can get benefited by the following services:

- Electronic database services such as Web of Science, Annual Reviews, Mathscinet, Scifinder Scholar, CAB abstract, GALE (The making of the modern world), Indian Citation Index, Springer Protocols, Library and Information Science Abstracts (LISA).
- Reference databases (biographies, dictionaries, directories, encyclopaedias,etc.
- Numerical and statistical databases
- E-images
- E-audio/visual resources
- Online Fulltext Journals
- E-Books
- Digital Libraries
- Institutional Repositories[2]

3. Acquisition of Electronic Resources and its Services:

Libraries are making their great effort in providing electronic resources which are very much in demand of library users.

Library services are going to be enhanced by providing services of electronic resources. The electronic resources can be acquired by the libraries by paying the online subscription also direct from the publishers/providers.

3.1 Acquisition through Library Consortium:

A library can also get the e-resources through consortium also. For that purpose, libraries are taking interest in joining the consortium. Central University libraries are getting benefit from the UGC-INGLIBNET and INDEST consortium in order to meet the users' demand. Consortia-based subscription to electronic resources provides following benefits to the library services:

- Access to large number of electronic resources at lower cost.
- facilitate in building up digital libraries
- provide better library services like CAS, SDI
- Offers archival access and preservation of subscribed electronic resources.

The examples of E-journals Consortia India are as follows:

- INDEST-AICTE Consortium
- UGC-INFONET
- CSIR Library Consortium
- ISRO Library Consortium
- IIM Library Consortium**[3]**

3.2 Acquisition through Digitization:

A Library can also generate the electronic resources by adopting the digitization process. The rare books and theses can be digitized for providing user services in more effective way. The digitization process involves so many issues copyright, its cost and usage also and libraries are adopting effective plans to cope up with these issues. The digitization process starts from the selection of collection to be digitized. Selection should be based on subject matter of the collection or date of publication or both.

3.3 Acquisition through Direct Subscription

A Library can subscribe the e-resources such as journals, e-books and databases direct from the publishers by paying the subscription price of the e-resources also. Though the subscribed e- resources are too costly that is why many libraries are not interested in subscribing directly. The libraries getting heavy fund and budget, they may acquire the e-resources directly.

4. Electronic Resource Services

The following services can be conferred to the user community with the help of the electronic resources:

Inter Library Loan (ILL):

Interlibrary loan document transmission systems such as Ariel or other similar protocols, for lending to other libraries can be allowed [4].

Pay-per-view:

An authorized user can view, download, and take print copies of single articles from the e-resources for academic purposes.

Course Package:

With the help of the e-resources, one can prepare the information content for the course packages according to the academic requirements and authorized users can get access into it.

Course Reserves:

The electronically available articles should be permitted to be included in library‘s course reserves in print or digital form on demand of authorized users of a special course. [5]

5. Conclusion:

The electronic resources have enabled libraries to improve their services in a variety of ways. Electronic resources come equipped with powerful search-and-retrieval tools that allow users to perform literature searches more efficiently and effectively. The electronic resources are available through web also, and users can get access to them 24 hours a day. A user can navigate directly from indexing databases to the fulltext of an article and can even follow further links from there.

References

1. Library of congress collections policy statements supplementary guidelines by Library of Congress. [Available at http://www.loc.gov/acq/devpol/electronicresources.pdf]
2. Johnson, Sharon, and etc. Issues for e-Resource Collection Development: A Guide for Libraries. [Available at http://www.ifla.org/files/assets/acquisition-collection-development/publications/IFLA_ELECTRONIC_RESOURCE_GUIDE_DRAFT%20FOR%20COMMENT.pdf]
3. Yernagula and P.K.Kelkar. Library Consortia: benefits and models of E-journals [Available at http://www.isical.ac.in/~serial/consortia/CBSOR-11.pdf].
4. Emighara, Linus C. E-resources and library practice: an overview of selection, acquisition and usages. [Available at http://www.slideshare.net/owoeye425/an-an-overview-of-selection-acquisition-and-usage-of-e-resources].
5. University of Illinois Library . Course reserves. [Available at http://www.library.illinois.edu/funkaces/services/reserves.html]

Scientometric Analysis of Research Productivity in Micro Electro Mechanical System (MEMS)

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1. Introduction

Micro Electro Mechanical Systems is the key enabling technology in micro domain. MEMS are the microscopic structures integrated onto silicon that combine mechanical, optical and fluidic elements with electronics. Typically no bigger than a grain of sand, these MEMS devices are complex machines that enable chips to become intelligent. These devices act as the most direct links between digital electronics and the physical world, allowing the integration of electronics and mechanical systems on a single chipset.

2. 28 Years of History

First developed in the 1970s and then commercialized in the 1990s, MEMS make it possible for systems of all kinds to be smaller, faster, more energy-efficient and less expensive. In a typical MEMS configuration, integrated circuits (ICs) provide the “thinking” part of the system, while MEMS complement this intelligence with active perception and control functions.

3. Sensing and Acting

MEMS are usually divided into two categories -- those devices that detect information, called micro sensors, and those devices that can respond to information, or act, called actuators. Micro sensors gather local information including, for example, thermal, biological, chemical, and optical input. The electronics of the devices can then process the information and may direct actuators to respond and control the environment (e.g. by moving, pumping, filtering) based on an intended, designed instruction.

4. MEMS Today and Tomorrow

MEMS devices now are making the world of the future a reality. Scientists have created “smart dust” where millions of miniscule MEMS sensors are spread over a military site and communicate information to humans or computers ready to interpret possible troop movements. “Smart roads” would have MEMS devices embedded in them, conveying information about the roadway, traffic and accidents to automobile-mounted global positioning systems, allowing drivers to avoid problems and alerting highway workers to areas that are potential trouble spots.

Today, MEMS are most commonly found as sensors in automobile airbags, but the devices are making extensive inroads into medical, aviation, defense, and wireless and optical communications systems

5. Scientometrics

Scientometrics is the science of measuring and analyzing science. As such, it includes the bibliometrics of scientific books and articles; but it also takes into account funding, demography, geography, etc.,The scientific measurement of the work of scientists, especially by way of analyzing their publications and the citations within them Scientometrics is the branch of science that describes the output traits in terms of organizational research structure, resource inputs and outputs, develops benchmarks to evaluate the quality of information output. Scientometric studies characterize the disciplines using the growth pattern and other attributes. These studies have potential qualities particularly in assessing the emerging disciplines and to map the global research on MEMS highlight the country wise scenario.

6. Objectives of the study

The main objectives of the study is to present the growth of literature on MEMS across the globe highlighting Indian contributions and make quantitative and qualitative assessment of the research by analyzing the research outputs towards identifying the following facts:

- Annual growth of publications
- Geographical distribution of research output
- Most prolific authors in the field
- Authorship pattern
- Document types used by the scientists
- Journal preferred by the researchers

7. Methodology

Data was collected from the IEEE *Xplore* digital library and it is a powerful resource for discovery and access to scientific and technical content published by the IEEE (Institute of Electrical and Electronics Engineers) and its publishing partners.IEEE *Xplore* provides Web access to more than 3-million full-text documents from some of the world's most highly cited publications in electrical engineering, computer science and electronics.The content in IEEE *Xplore* comprises over 160 journals, over 1,200 conference proceedings, more than 3,800 technical standards, over 1,000 eBooks and over 300 educational courses. Approximately 25,000 new documents are added to IEEE *Xplore* each month. Database was searched with the keyword MEMS (Micro Electro Mechanical System) MST (Micro System Technology and MMS (Micro Machining systems.

8. Results and Discussions

8.1 Annual growth of publications

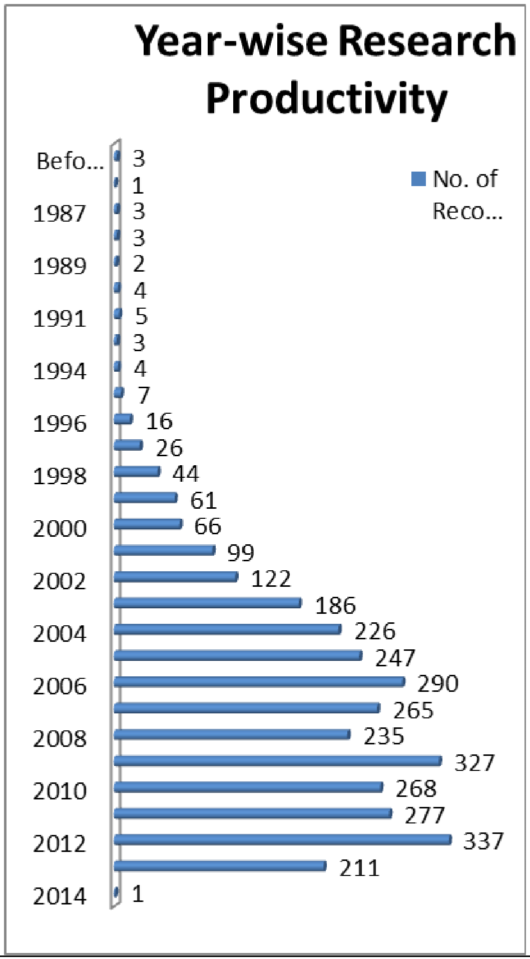
The year wise research productivity reveals very poor publications during 1985 to 1995 which signifies less focus on MEMS research. After 1995, rapid growth was observed till now. This was mainly due to the depletion & cost escalation of MEMS and associated environmental issues. After 1995, due to increased awareness and increasing demand, people have focussed research on MEMS. About 40 % of the publications were during the period 2007 to 2013 and this may be the reason not only due to the demand but the larger global concerns towards the environmental issues. The maximum (337) publications were published in the year 2012.

Table-1& Graph 1.

Year wise research productivity

YEAR WISE RESEARCH PRODUCTIVITY

Publication Year	No. of Record	Percentage
2014	1	0.03
2013	211	6.319
2012	337	10.093
2011	277	8.296
2010	268	8.026
2009	327	9.793
2008	235	7.038
2007	265	7.937
2006	290	8.685
2005	247	7.397
2004	226	6.768
2003	186	5.571
2002	122	3.654
2001	99	2.965
2000	66	1.977
1999	61	1.827
1998	44	1.318
1997	26	0.779
1996	16	0.479
1995	7	0.21
1994	4	0.12
1993	3	0.09
1991	5	0.15
1990	4	0.12
1989	2	0.06
1988	3	0.09
1987	3	0.09
1985	1	0.03
Before 1985	3	0.09
TOTAL	3339	100



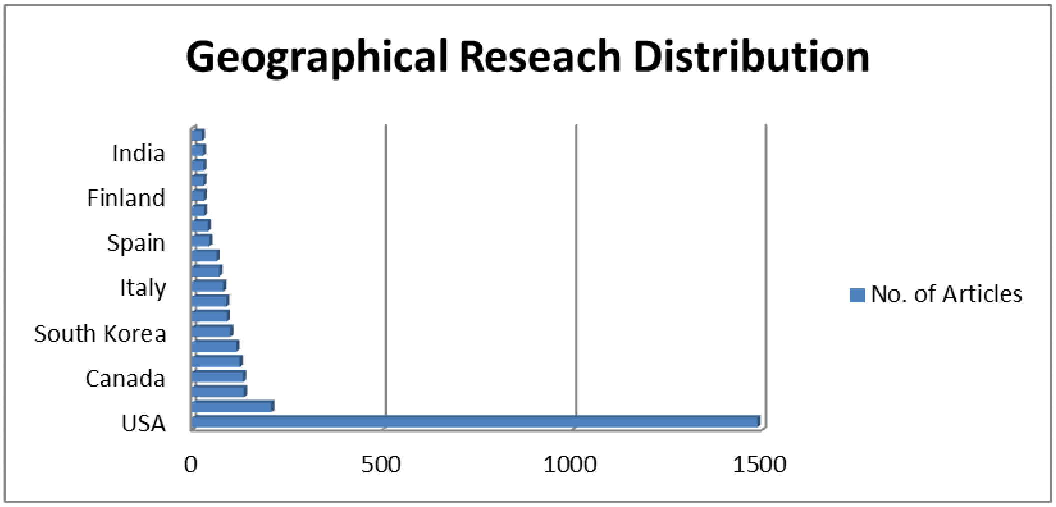
8.2 Geographical distribution of research output.

It is revealed from the data that USA is the top most country that encourage MEMS research in various subject by contributing 45.56% of the total literature output, while china, Japan,Canada and Taiwan were the next major contributors with 209 (6.259%), 137 (4.103%), 135 (4.043%) and 126 (3.744%) research publication respectively. The to-tal number of countries involved in MEMS research is

Geographical distribution of research Table-2

GEOGRAPHICAL DISTRIBUTION OF RESEARCH			
SL.NO	COUNTRY	TO TAL NO. OF ARTICLES PULISHED	PERCENTAGE
1	USA	1488	44.56
2	China	209	6.259
3	Japan	137	4.103
4	Canada	135	4.043
5	Taiwan	126	3.774
6	UK	117	3.504
7	South Korea	101	3.025
8	France	92	2.755
9	Singapore	90	2.695
10	Italy	82	2.456
11	Germany	72	2.156
12	Switzerland	65	1.947
13	Spain	46	1.378
14	Netherlands	42	1.258
15	Australia	32	0.958
16	Finland	31	0.928
17	Sweden	30	0.898
18	Turkey	30	0.898
19	India	29	0.869
20	Belgium	26	0.779
21	Korea	25	0.749
22	Pennsylvania	19	0.569
23	Austria	11	0.329
24	Israel	10	0.299
25	Denmark	9	0.27
26	England	9	0.27
27	Norway	9	0.27
28	Saudi Arabia	8	0.24
29	Egypt	7	0.21
30	Ireland	7	0.21
31	Portugal	7	0.21
32	Thailand	7	0.21
33	Malaysia	5	0.15
34	Greece	4	0.12
35	Iran	3	0.09
36	Isreal	3	0.09
37	Mexico	3	0.09
38	Poland	2	0.06
39	Scotland	2	0.06
40	Slovenia	2	0.06
41	Ukraine	2	0.06
42	Vietnam	2	0.06
43	Brazil	1	0.03
44	Colombia	1	0.03
45	Cyprus	1	0.03
46	Florida	1	0.03
47	New Zealand	1	0.03
48	Pakistan	1	0.03
49	Unknown Places	197	5.9
	TOTAL	3339	100

Graph 2



Among the Asian countries China is the major contributor of MEMS research, which is followed by Japan with 209 (6.259%), and India only with 29 (0.869%) research publications respec-tively with regard to MEMS research.

8.3 Authorship Pattern

The study revealed that 9223 authors have done research on MEMS. The top 20 authors contributed 400 research papers of the total research output. Among the high productivity authors Rebeiz, G.M., Mansour, R.R.and Solgaard, O.were in top 3 positions re-spectively with 45, 32, and 24 records.

Table-3

AUTHORSHIP PATTERN WISE RESEARCH PRODUCTIVITY			
SL.NO.	AUTHORSHIP PATTERN	NO. OF RECORDS	PERCENTAGE
1	MORE THAN FIVE AUTHOR	730	21.9
2	TRIBLE AUTHOR	709	21.2
3	DOUBLE AUTHOR	617	18.5
4	FOUR AUTHOR	591	17.7
5	FIVE AUTHOR	459	13.7
6	SINGLE AUTHOR	175	5.24
7	UNKNOWN AUTHOR	58	1.74
	TOTAL	**3339**	**100**

Graph 3. Authorship Pattern

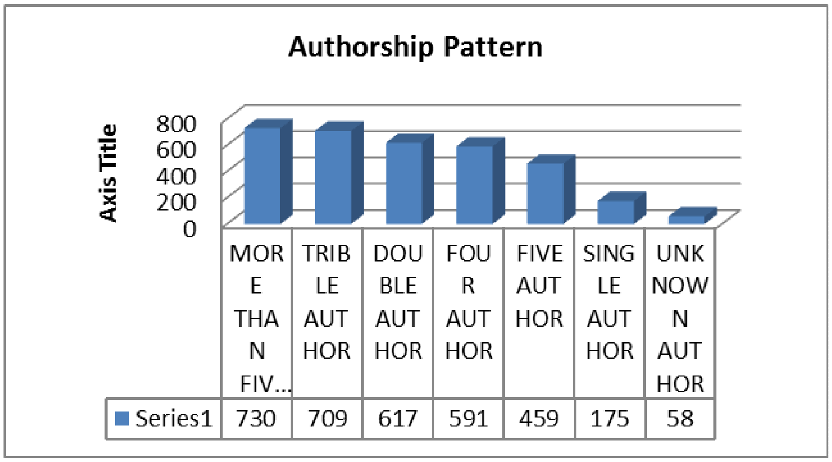


Table 4. Publisher wise research productivity

PUBLISHERWISE RESEARCH PRODUCTIVITY			
SL.NO.	PUBLISHER	NO. OF RECORDS	PERCENTAGE
1	IEEE	2779	83.23
2	IET	248	7.43
3	AIP	211	6.32
4	AVS	80	2.4
5	TUP	8	0.24
6	BIAI	6	0.18
7	Others	3	0.09
8	IBM	2	0.06
9	IEEE Microwave Theory and Techniques Society	1	0.03
10	IEEE Photonics Society	1	0.03
TOTAL		3339	100

8.4 Journals preferred by the researchers

The study shows that 1749 journals were used to publish MEMS related research literature. The top 10 prominent jour-nals that publish MEMS research literature for the study period is listed in table 5. “Microelectromechanical Systems, Journal of” is the top journal that published 27.703% of the total literature output, while “Sensors Journal, IEEE” and “Microwave Theory and Techniques, IEEE Transactions on” is on 2nd and 3rd position respectively with 6.469% & 4.552% of the total literature output. The top 10 journals con-tribute only 1949 literatures of total literature output, it shows that the proliferation of MEMS research published in large number of scholarly journals as MEMS is highly multi-disciplinary field.

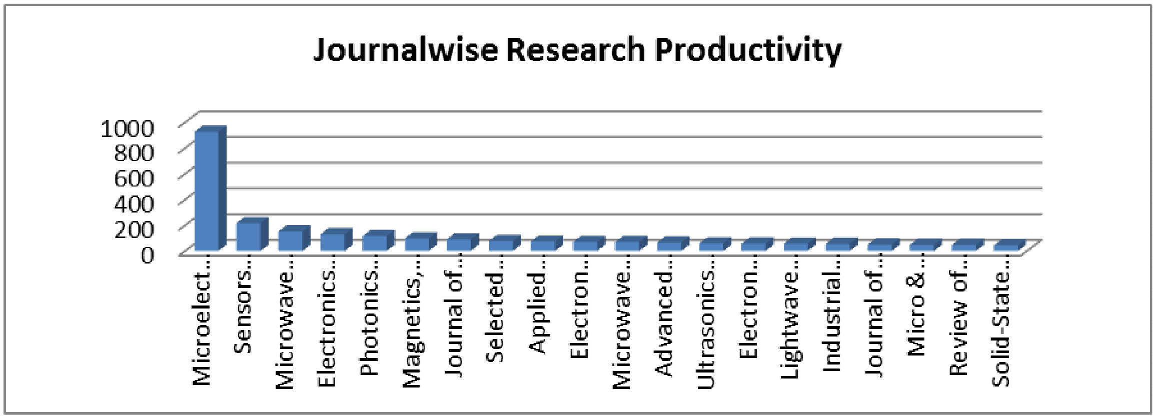
Table 5. Journal wise research productivity

JOURNALWISE ARTICLE PRODUCTIVITY			
SL NO.	JOURNAL TITLE	TOTAL NO. OF ARTICLES PUBLISHED	PERCENTAGE
1	Microelectromechanical Systems, Journal of	925	27.703
2	Sensors Journal, IEEE	216	6.469
3	Microwave Theory and Techniques, IEEE Transactions on	152	4.552
4	Electronics Letters	130	3.893
5	Photonics Technology Letters, IEEE	116	3.474
6	Magnetics, IEEE Transactions on	98	2.935
7	Journal of Applied Physics	90	2.695
8	Selected Topics in Quantum Electronics, IEEE Journal of	78	2.336
9	Applied Physics Letters	74	2.216
10	Electron Device Letters, IEEE	70	2.096
11	Microwave and Wireless Components Letters, IEEE	70	2.096
12	Advanced Packaging, IEEE Transactions on	65	1.947
13	Ultrasonics, Ferroelectrics and Frequency Control, IEEE Transactions on	59	1.767
14	Electron Devices, IEEE Transactions on	57	1.707
15	Lightwave Technology, Journal of	56	1.677
16	Industrial Electronics, IEEE Transactions on	55	1.647
17	Journal of Vacuum Science & Technology B: Microelectronics and Nanometer Structures	50	1.497
18	Micro & Nano Letters, IET	48	1.438
19	Review of Scientific Instruments	47	1.408
20	Solid-State Circuits, IEEE Journal of	44	1.318
21	Instrumentation and Measurement, IEEE Transactions on	42	1.258
22	Antennas and Propagation, IEEE Transactions on	36	1.078
23	Components and Packaging Technologies, IEEE Transactions on	35	1.048
24	Journal of Vacuum Science & Technology A: Vacuum, Surfaces, and Films	30	0.898
25	Mechatronics, IEEE/ASME Transactions on	26	0.779
26	Aerospace and Electronic Systems Magazine, IEEE	24	0.719
27	Microwave Magazine, IEEE	23	0.689
28	Proceedings of the IEEE	23	0.689
29	Quantum Electronics, IEEE Journal of	21	0.629
30	Device and Materials Reliability, IEEE Transactions on	19	0.569
31	Aerospace and Electronic Systems, IEEE Transactions on	18	0.539
32	Instrumentation & Measurement Magazine, IEEE	18	0.539
33	Semiconductor Manufacturing, IEEE Transactions on	18	0.539
34	Antennas and Wireless Propagation Letters, IEEE	17	0.509
35	Biomedical Engineering, IEEE Transactions on	17	0.509
36	Circuits and Systems I: Regular Papers, IEEE Transactions on	17	0.509
37	Computer-Aided Design of Integrated Circuits and Systems, IEEE Transactions on	17	0.509
38	Control Systems Technology, IEEE Transactions on	17	0.509
39	Microwaves, Antennas & Propagation, IET	15	0.449
40	Communications Magazine, IEEE	14	0.419
41	Components, Packaging and Manufacturing Technology, IEEE Transactions on	13	0.389
42	Applied Superconductivity, IEEE Transactions on	12	0.359
43	Circuits and Devices Magazine, IEEE	12	0.359
44	Nuclear Science, IEEE Transactions on	12	0.359
45	Spectrum, IEEE	12	0.359
46	Electronics Packaging Manufacturing, IEEE Transactions on	11	0.329

47	Microwave and Guided Wave Letters, IEEE	10	0.299
48	Automation Science and Engineering, IEEE Transactions on	9	0.27
49	Biomedical Circuits and Systems, IEEE Transactions on	9	0.27
50	Photonics Journal, IEEE	9	0.27
51	Science, Measurement and Technology, IEE Proceedings -	9	0.27
52	Vehicular Technology, IEEE Transactions on	9	0.27
53	Solid-State Circuits Society Newsletter, IEEE	8	0.24
54	Tsinghua Science and Technology	8	0.24
55	Automatic Control, IEEE Transactions on	7	0.21
56	Circuits and Systems II: Express Briefs, IEEE Transactions on	7	0.21
57	Engineering & Technology	7	0.21
58	Industry Applications, IEEE Transactions on	7	0.21
59	Nanotechnology, IEEE Transactions on	7	0.21
60	Potentials, IEEE	7	0.21
61	Robotics & Automation Magazine, IEEE	7	0.21
62	Antennas and Propagation Magazine, IEEE	6	0.18
63	Computer	6	0.18
64	Design & Test of Computers, IEEE	6	0.18
65	Dielectrics and Electrical Insulation, IEEE Transactions on	6	0.18
66	Electrical Insulation Magazine, IEEE	6	0.18
67	Systems Engineering and Electronics, Journal of	6	0.18
68	Computational Science & Engineering, IEEE	5	0.15
69	Consumer Electronics, IEEE Transactions on	5	0.15
70	Education, IEEE Transactions on	5	0.15
71	Nanobiotechnology, IET	5	0.15
72	Robotics, IEEE Transactions on	5	0.15
73	Circuits and Systems I: Fundamental Theory and Applications, IEEE Transactions on	4	0.12
74	Display Technology, Journal of	4	0.12
75	Electrical and Computer Engineering, Canadian Journal of	4	0.12
76	Engineering in Medicine and Biology Magazine, IEEE	4	0.12
77	Engineering Science and Education Journal	4	0.12
78	Microwaves, Antennas and Propagation, IEE Proceedings	4	0.12
79	Optical Communications and Networking, IEEE/OSA Journal of	4	0.12
80	Reliability, IEEE Transactions on	4	0.12
81	Solid-State Circuits Magazine, IEEE	4	0.12
82	Circuits, Devices & Systems, IET	3	0.09
83	Communications, IET	3	0.09
84	Control Systems, IEEE	3	0.09
85	Control Theory & Applications, IET	3	0.09
86	Electronics Systems and Software	3	0.09
87	Engineering Management, IEEE Transactions on	3	0.09
88	Geoscience and Remote Sensing, IEEE Transactions on	3	0.09
89	IEE Review	3	0.09
90	Manufacturing Engineer	3	0.09
91	Micro, IEEE	3	0.09
92	Nanotechnology Magazine, IEEE	3	0.09
93	Neural Systems and Rehabilitation Engineering, IEEE Transactions on	3	0.09
94	Plasma Science, IEEE Transactions on	3	0.09
95	Pulse, IEEE	3	0.09
96	Selected Areas in Communications, IEEE Journal on	3	0.09
97	Systems, Man, and Cybernetics, Part C: Appl. and Rev., IEEE Transa. on	3	0.09
98	Very Large Scale Integration (VLSI) Systems, IEEE Transactions on	3	0.09
99		2	0.06
100	Circuits and Systems II: Analog and Digital Signal Processing, IEEE Tr. on	2	0.06

101	Circuits and Systems Magazine, IEEE	2	0.06
102	Circuits, Devices and Systems, IEE Proceedings -	2	0.06
103	Communications Letters, IEEE	2	0.06
104	Communications Surveys & Tutorials, IEEE	2	0.06
105	Computer Graphics and Applications, IEEE	2	0.06
106	IBM Journal of Research and Development	2	0.06
107	Mobile Computing, IEEE Transactions on	2	0.06
108	Power Delivery, IEEE Transactions on	2	0.06
109	Power Electronics, IEEE Transactions on	2	0.06
110	Systems, Man, and Cybernetics, Part B: Cybernetics, IEEE Transactions on	2	0.06
111	Wireless Communications, IEEE Transactions on	2	0.06
112		1	0.03
113	Audio, Speech, and Language Processing, IEEE Transactions on	1	0.03
114	Communications, IEEE Transactions on	1	0.03
115	Components, Packg, and Manufacturing Tech. Part A, IEEE Tr. on	1	0.03
116	Components, Packg, and Manuf. Tech., Part B: Adv. Packg, IEEE Tr. On	1	0.03
117	Components, Packaging, and Manuf. Technology, Part C, IEEE Tr. on	1	0.03
118	Computers & Digital Techniques, IET	1	0.03
119	Computing & Control Engineering Journal	1	0.03
120	Computing in Science & Engineering	1	0.03
121	Control Theory and Applications, IEE Proceedings -	1	0.03
122	Electronics & Communication Engineering Journal	1	0.03
123	Fuzzy Systems, IEEE Transactions on	1	0.03
124	Generation, Transmission & Distribution, IET	1	0.03
125	Haptics, IEEE Transactions on	1	0.03
126	Industrial Electronics Magazine, IEEE	1	0.03
127	Industry Applications Magazine, IEEE	1	0.03
128	Intelligent Transportation Systems, IEEE Transactions on	1	0.03
129	NanoBioscience, IEEE Transactions on	1	0.03
130	Networking, IEEE/ACM Transactions on	1	0.03
131	Oceanic Engineering, IEEE Journal of	1	0.03
132	Parallel and Distributed Systems, IEEE Transactions on	1	0.03
133	Pervasive Computing, IEEE	1	0.03
134	Science, Measurement & Technology, IET	1	0.03
135	Security & Privacy, IEEE	1	0.03
136	Systems Journal, IEEE	1	0.03
137	Women in Engineering Magazine, IEEE	1	0.03
		3339	100

Graph 5



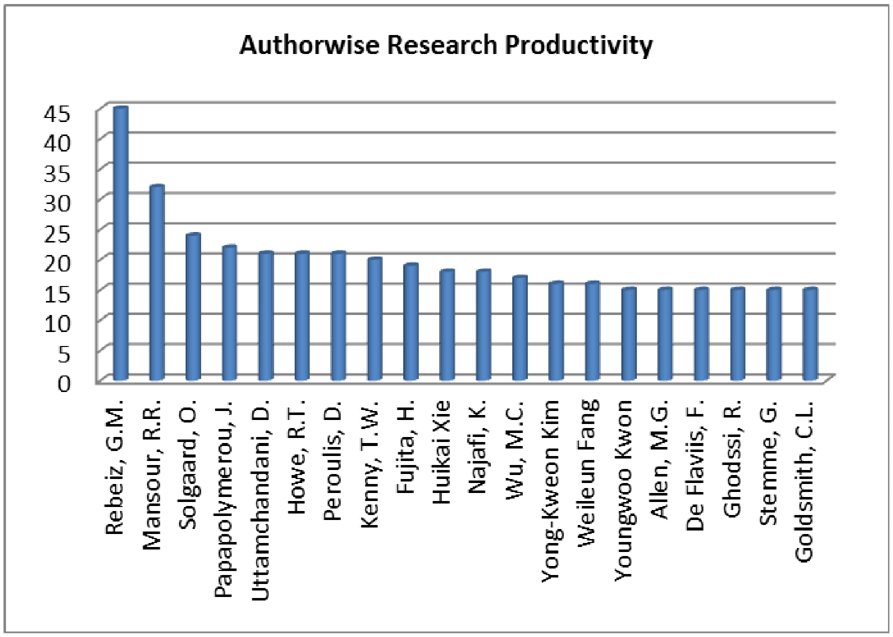
8.5 Results on Indian Context

India has contributed 29 publications during the study period.

Table 6. Author wise research productivity -– Indian Context

AUTHORWISE RESEARCH PRODUCTIVITY			
SL.NO.	AUTHOR NAME	NO. OF RECORDS	PERCENTAGE
1	Rebeiz, G.M.	45	0.0033
2	Mansour, R.R.	32	0.0023
3	Solgaard, O.	24	0.0018
4	Papapolymerou, J.	22	0.0016
5	Uttamchandani, D.	21	0.0015
6	Howe, R.T.	21	0.0015
7	Peroulis, D.	21	0.0015
8	Kenny, T.W.	20	0.0015
9	Fujita, H.	19	0.0014
10	Huikai Xie	18	0.0013
11	Najafi, K.	18	0.0013
12	Wu, M.C.	17	0.0012
13	Yong-Kweon Kim	16	0.0012
14	Weileun Fang	16	0.0012
15	Youngwoo Kwon	15	0.0011
16	Allen, M.G.	15	0.0011
17	De Flaviis, F.	15	0.0011
18	Ghodssi, R.	15	0.0011
19	Stemme, G.	15	0.0011
20	Goldsmith, C.L.	15	0.0011

Graph 6



9. Summary

A currently most popular research discipline has been reviewed by Scientometric methods. The time dependent overall number of MEMS articles is given, revealing a still strongly increasing research activity in this field.

The MEMS articles were analyzed with respect to the most productive authors, research organizations, countries of authors, and leading journals. The same study was also carried out in Indian context and results were discussed. Among the geographical location of research organizations the USA, China, Canada, Japan and Taiwan were on the top and India is holding 19th position in terms of maximum research publications.

The research landscape of the MEMS research field was established using the IEEE database and access tool.

References

1. Barth, A. & Marx, W. (2008). Mapping High-Temperature Superconductors – A Scientometric Approach. Journal of Superconductivity and NovelMagnetism 21, 113- 128. (PDF), URL : http://arxiv.org/abs/cond-mat/0609114 |

2. Werner Marx and Andreas Barth. Carbon Nanotubes – A sci-entometric study. ISBN 97853307-054-4. Publisher: InTech, March 2010, Thomson Reuters (2009), URL: www.isinet.com/isi/ |

3. Gupta, B. M. et al. (2002). India's collaboration with Australia in science and technology: A Scientometric study of co-authored papers during 1995-1999", DESIDOC Bulletin of InformationTechnology. 22 (6); pp. 21-35.

4. Jeevan, V. K .J. and Gupta, B. M. (2002) "A scientometric analysis of research output from Indian Institute of Technology, Kharagpur", Scientometrics. 53 (1); pp. 165–168

5. Kademani, B.S. et al. (2007). Mapping of Indian publications in S&T: A scientometric analysis of publications in science citation index". DESIDOC Bulletin of Information Technology. 27 (1). pp. 17-34.

6. Lee Chu Keong (2003). A scientometric study of the research performance of the Institute of Molecular and Cell Biology in Singapore, Scientometrics, 56 (1); pp.29-34.
7. Sharma, R.M. (2009). Research publication trend among scientists of Central Potato Research Institute: A bibliometric study. Annals of Library and Information studies. 56 (1), p. 29-34.

8. Vinayagamoorthy, P. et al. (2009). Authorship pattern and collaborative research in herbal literature.PEARL. 3 (4); pp. 32-38.

9. Baby, K and Kumaravel, J. P. S. (2012). Research Productivity of Periyar university: A Bibliometric Analysis. International Research Journal of Library, Information and Archival Studies. 1(1) , February, 2012.

कॉपीराइट एवं इसका सूचना समाज में महत्व

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सारांश

प्रकाशन के क्षेत्र में अधिकारों के संरक्षण के लिए कॉपीराइट एक वरदान साबित हुआ है। इसके द्वारा लेखकों, प्रकाशकों तथा नई खोज करने वाले विद्वानों की रचनाधर्मिता के संरक्षण को कानूनी अधिकार मिल जाता है, ताकि उसके कार्य का मूल्यांकन समाज द्वारा किया जा सके। समय–समय पर इसमें सुधार होते रहे है, क्योंकि नित नई बदलती तकनीक के युग में इसकी बेहद आवश्यकता है ताकि इसके दुरूपयोग को रोका जा सके। प्रस्तुत लेख में कॉपीराइट के सूचना समाज में महत्व पर प्रकाश डाला गया है।

1. प्रस्तावना

कॉपीराइट का अधिकार कानून के द्वारा कृतिकार, लेखक, निर्माताओं के लिए साहित्यिक, नाटक, संगीत और कलात्मक काम, चलचित्र निर्माता, ध्वनि रिकार्डिंग निर्माताओं को कृति के प्रजनन, पुर्नउत्पादन, निर्माण, संचार करने, अनुकूलन और अनुवाद करने का अधिकार प्रदान करता है तथा उसकी मूलकृति को संरक्षित कर उसके दुरूपयोग तथा अवैधानिक उपयोग से रोकता है। यह कॉपीराइट कानून का मूल उद्देश्य हैं। कॉपीराइट मूल साहित्य, संगीत, नाटक और कलात्मक काम,फिल्म एवं सिनेमेटोग्राफ, ध्वनि रिकार्डिंग श्रेणी में काम करता है।

आज कॉपीराइट की जागरूकता की कमी के कारण विभिन्न मुद्दों पर कॉपीराइट और अधिकारों से संबंधित हितधारकों के बीच अनेक मुद्दे सामने आते है जैसे पेशेवर प्रयोगकर्ता, वैज्ञानिक, शैक्षणिक कार्यो में संलग्न सदस्यों के मध्य हमेशा कॉपीराइट के अनेक मुद्दे उठ

खड़े होते है। चूँकि ये वर्ग ही सर्वाधिक बौद्धिक, वैचारिक, मूल अभिलेखों की सम्पदा को उत्पन्न करते है। अतः स्वाभाविक है कि ये बौद्धिक संपदा के अधिकार के प्रति सचेत भी हो ताकि कॉपीराइट एक्ट के उल्लंघन को प्राथमिक स्तर पर ही रोका जा सके इस हेतु मानव संसाधन विकास मंत्रालय द्वारा अनेक प्रशिक्षण तथा साहित्य का सृजन किया जा रहा है जिससे उनमें कॉपीराइट एक्ट के संबंध में जागरूकता आ सके। इन प्रयासों के फलस्वरूप आमजन में कॉपीराइट के प्रति जागरूकता आ रही है इसके प्रचार प्रसार में मीडिया तथा पत्रकारिता ने भी अहम भूमिका निभाई है। आज सभी प्रकाशन, वेबसाइट, प्रिंटमीडिया, इलेक्ट्रानिक मीडिया द्वारा अपने प्रकाशनों को कॉपीराइट करा कर स्वयं के प्रकाशन, साहित्य को संरक्षित करा रहे है तथा मौलिक कृति के संबंध में कॉपीराइट करा रहे है।

2. कॉपीराइट

कॉपीराइट वह कानून है जो साहित्य निर्माता, नाटक, संगीत अथवा चित्रकला, चलचित्र निर्माता, वेबसाइट, लेखक, निर्माता को उनके मूल कृति को कॉपी राइट पंजीयन कराकर यह अधिकार प्राप्त कराता है कि उनका साहित्य, कृति कॉपीराइट के तहत संरक्षित है तथा वे उसका उत्पादन, प्रजनन, संचार के अधिकारी है तथा उनके मूल कृति को एक निश्चित समयावधि तक संरक्षित करने का अधिकार प्रदान करता है तथा दायित्व का निवर्हन करने का कानूनी अधिकार प्रदान करता है।

कॉपीराइट डिजाइन एवं पेटेंट एक्ट 1988 यू.के. के द्वारा कॉपीराइट को किसी मालिक के द्वारा उत्पादित मूलकृति को कानूनी सुरक्षा प्रदान की जाती है।

कॉपीराइट मुख्य दो अधिकारों से मिलकर बना हुआ है– आर्थिक अधिकार एवं नैतिक अधिकार, आर्थिक अधिकार से संबंधित पुर्नउत्पादन का अधिकार ब्राडकास्टिंग, लोक प्रदर्शन, अंगीकरण, अनुवादीकरण सभी लोक सम्पादन एवं वितरण के अधिकार है। जबकि नैतिक अधिकार किसी लेखक की कृति को संशोधन, नष्टीकरण से बचाते हुए सुरक्षा प्रदान कराता है। दोनों प्रकार के अधिकारों का उपयोग कृतिकार कर सकता है। वह अपने वास्तविक कार्य

का स्वयं उपयोग कर सकता है अथवा किसी अन्य व्यक्ति को उस कार्य को उपयोग करने हेतु स्वीकृति प्रदान कर सकता है। अथवा प्रतिबंधित अथवा रोक सकता है। सामान्य तौर पर कॉपीराइट कार्य पर मालिक का अधिकार होता है। जिसे बिना उसकी स्वीकृति के किसी अन्य द्वारा अनाधिकृत रूप से उपयोग नहीं किया जा सकता है।वह मूलकृति जिसके ऊपर कॉपी राइट लागू होगा।

कॉपीराइट का संकेत © के द्वारा प्रर्दिशत किया जाता है। जो किसी भी कार्य में एक कॉपीराइट का दावा है एवं जनता को सचेत करने के लिए आवश्यक है। पंजीकरण के बाद कापीराइट नोटिस एक प्रतीक की तरह © अक्षर सर्कल में एक शब्द ''कॉपीराइट'' लेखक या कृतिकार के नाम के बाद कॉपीराइट मालिक के साथ प्रथम प्रकाशन वर्ष अंकित होता है। उदाहरण के तौर पर – सूद, सुनील 1999 ©

कॉपीराइट अधिनियम और कॉपीराइट नियमों के मूल उद्देश्यों की पूर्ति करने प्रर्वतन एंजेसियों के साथ–साथ आम जनता, सरकार के अधिकारियों के पालन कराने कॉपी राइट अधिनियम 1957 (संशोधन के रूप में समय–समय पर) और कॉपीराइट नियम 1958 (संशोधन के रूप में समय–समय पर) के संदर्भ में कोई कार्यवाही करने से पहले लेने के लिए पंजीकरण और कॉपीराइट उल्लघंन को रोकने के लिए इसकी प्रतिलिपियाँ इस अधिनियम और नियमों से प्राप्त किया जा सकता है।

कॉपीराइट पंजीयन कर मूल कृति के प्रजनन/ प्रतिलिपिकरण/ उत्पादन/ निर्माण, प्रकाशन कर वाणिज्य रूप में उपयोग करने का अधिकार मौलिक कृति के निर्माता अथवा लेखक का होता है। जो कॉपीराइट अधिनियम के तहत उसे एक निश्चित अवधि के लिए प्रदान किया जाता है। किन्तु आम जन में कॉपीराइट मौलिक विचारों के संरक्षण के प्रति जागरूकता की कमी से कॉपीराइट और अधिकारों से संबंधित हितधारकों के बीच, प्रवर्तन एजेंसियों जैसे पेशेवर प्रयोक्ताओं, वैज्ञानिकों तथा शैक्षणिक समुदाय के सदस्यों में सार्वजनिक है।

3. कॉपीराइट किए जाने वाली कृतियॉ

किसी मूलकृति साहित्य, नाटक, संगीत, चित्रकला, कलात्मकता, फिल्म, चलचित्र, ध्वनि रिकार्डिंग के कृतिकार, चित्रकार या कृतिकार या एक लेखक द्वारा किया गया किंतु संगीत, चित्रकला, साहित्य फिल्म चलचित्र का निर्माण एक से अधिक व्यक्तियों द्वारा किया जाता है। जो संयुक्त कार्य या संयुक्त लेखक कहलाता है उस पर पूरे समूह का मालिकाना हक होता है। कॉपीराइट के तहत विभिन्न प्रकार के साहित्य कृतियों को पंजीकरण करा कर सुरक्षा प्रदान करता है। भारत में कॉपीराइट कानून निम्न मूलकृतियों को कॉपीराइट एक्ट के तहत सुरक्षा प्रदान कराता है।

1. **मूल साहित्यः–** इसके अंतर्गत लेखक/साहित्यकार द्वारा अपने विचारों को लेख/साहित्य के रूप मे सामाजिक सांस्कृतिक, शैक्षणिक, आर्थिक, नैतिक अदि मूल्यों पर आधारित विचारों को एक कृति के रूप मे प्रकट करता है। इस साहित्य को वह नाटक, कहानियों, उपन्यासों, आदि स्वरूपों मे प्रकट करता है। जिसका कॉपीराइट किया जा सकता है।

2. **कलात्मकता** :– कृतिकार, चित्रकार, मूर्तिकार, आर्किटेक्चर, डिजाइनर द्वारा अपने विचारों भावनाओं को चित्रकला मूर्तिकला, मानचित्र, चित्रकारी, चार्ट, योजना, वस्तु शिल्प, वेबसाईट अभिव्यक्ति एक तस्वीर स्वरूप में प्रस्तुत करता है। जो उसकी मौलिक कृति होती है। अतः उसकी कलात्मकता, कौशल को भी कॉपीराइट के तहत उसकी मौलिक कृति की रक्षा की जाती है।

3. **संगीत** :– जिस प्रकार कलात्मकता एक दैविक योग से प्राप्त क्षमता है उसी प्रकार संगीत भी एक इसी श्रेणी की कला है। जिसमे संगीतकार द्वारा अपनी कलात्मकता तथा

कौशल के माध्यम से अपने विचारेां भावनाओं की अभिव्यक्ति संगीत के रूप मे करता है विभिन्न ग्राफिक्स संकेतो के माध्यम से पेपर पर प्रदर्शित किया जाता है। तथा उसे ध्वनि बोली गायन के साथ संगीत के माध्यम से प्रदर्शन किया जाता है। इनके भी मौलिक कृति को कॉपीराइट कानून के तहत संरक्षित किया गया है।

4. **ध्वनि रिकार्डिग** :– आज संगीत में विभिन्न ध्वनियों का सम्मेलन करा कर संगीत निर्माण किया जा रहा है। अतः विभिन्न ध्वनियों को ध्वनि निर्माता द्वारा रिकार्डिग किया जाता है। जो सी.डी. रोम, ग्रामोफोन रिकार्ड, डी.वी.डी., मेगनेटिक डिस्क मे रिकार्ड किया जाता है।

5. **चलचित्र फिल्म** :– किसी भी कार्यक्रम कार्यो के दृश्य रिकार्डिग जो चलित छवि को चलचित्र स्वरूप में फिल्म इलेक्ट्रानिक्स माध्यमों में रिकार्ड किया जाता है। इसमे, ध्वनि संगीत समाहित होता है। चलचित्र फिल्म या सिनोमैटोग्राफी कहा जाता है। जो फिल्मों में रिकार्ड किया जाता है इनके मूलकृतियों भी कॉपीराइट के तहत संरक्षित किया गया है। शासकीय कार्यक्रमों, प्रकाशनों जो उनके दिशा निर्देशों,नियंत्रण में संचालित होती है जैसे सरकारी विभाग, विधायिका, न्यायपालिका द्वारा निर्मित अभिलेख कॉपीराइट के तहत एक भारतीय द्वारा साहित्य नाटक, संगीत लेखन का कार्य जो भारत का नागरिक हो या भारत मे पहले प्रकाशित हो या लेखक द्वारा अप्रकाशित काम कृति का समय आदि को भारतीय कॉपीराइट के कार्यों के तहत संरक्षित किया जाता है।

4. कॉपीराइट अधिनियम 1957 :–

कॉपीराइट अधिनियम मूलकृति वह चाहे किसी भी स्वरूप मे क्यों न हो को संरक्षित करता है। ये विभिन्न स्वरूप जैसे साहित्य, नाटक, संगीत, गीत, चित्रकला, कृति, कलात्मकता, फिल्म चलचित्र, ध्वनि रिकार्डिग, कम्प्यूटर सॉफ्टवेयर तथा कम्प्यूटर वेबसाईट की कृति के अनाधिकृत उपयोग को रोकने तथा इनकी रक्षा करना ही मूल उद्देश्य है।

अतः कॉपीराइट, अभिव्यक्ति को संविधान के तहत पालन कराने को प्रेरित करता है। जबकि पेटेन्ट में वैज्ञानिक शोध की, विधि विचारों को संरक्षित कर कृतिकार अविष्कारक को उसके उपयोग करने का अधिकार एक निश्चित अवधि हेतु दिया जाता है। ताकि शोध का लाभ इस व्यक्ति या संस्था को पुरस्कार स्वरूप दिया जाता है।

20वीं सदी का युग कागज पर साहित्य उत्पादन का युग था तथा 20वीं सदी के अंत मे उसने सूचना विस्फोट का रूप ले लिया था किंतु 21वीं सदी इलेक्ट्रानिक प्रकाशनों का युग है

आरंभिक दौर में कागज पर साहित्य तथा इलेक्ट्रानिक साहित्य दोनो का उत्पादन साहित्य विस्फोटन स्तर पर हो रहा है जिसे नियंत्रण करना अत्यंत कठिन है। उसी प्रकार सभी साहित्यों को कॉपीराइट प्रदान कराना संभव नहीं है इस कारण समान्यतः निम्न मूलकृतियों को कॉपीराइट प्रदान नही किया जाता है जैसे खिताब, पुरूस्कार का नाम, लघु शब्द संयोजन, नारे, छोटे वाक्यांशों, कथानक तथा तथ्यात्मक सूचना या विचारों की रक्षा नहीं करता है।

5. कॉपीराइट के तहत कृति की रक्षा :–

यह अति आवश्यक है कि मूलकृति के निर्माता को प्रोत्साहन हेतु पुरस्कार स्वरूप उन्हें उसके उत्पादन, प्रजनन के अधिकार के साथ–साथ उसके मूलकृति को संरक्षित तथा सुरक्षित रखने के लिए आश्वस्त किया जावे और कॉपीराइट के पालन हेतु कड़ी सुरक्षा व्यवस्था आवश्यक हो ताकि समाज का आर्थिक, सांस्कृतिक, साहित्यक विकास सुनिश्चित किया जा सके। कॉपीराइट संरक्षण लागू किया जाना एवं कॉपीराइट कानून के अपवादों और सीमाओं को सुनिश्चित किया जाना आवश्यक है ताकि उपयोगकर्ता तथा मूलकृति निर्माता के बीच संतुलन बनाये रखा जा सके। कॉपीराइट अधिकार प्राप्त मालिकों और सामाजिक विकास व्यवस्था के मध्य यह एक अपवाद है कई बार शैक्षणिक, आर्थिक, भौतिक या धार्मिक अनुष्ठानों और इसी प्रकार के आयोजनों हेतु इसमें छूट दी है। कॉपीराइट उल्लघंन विशेष रूप से माना जाता है जब कॉपीराइट युक्त मूलकृति का अधिकतम भाग का उपयोग किया जाता है। कई बार गुणवत्ता के बजाय मात्रा को अधिक जोर दिया जाता है। ताकि कॉपीराइट के मूल उद्देश्य को भौतिक स्वरूप में पारित किया जा सके।

अतः कॉपीराइट वह अधिकार है जिसमें नियमों के अधीन रहते हुए एक प्रकार का निष्पक्ष सौदा है जिसमे शोध, अध्ययन, आलोच्य समीक्षा, साभार रिर्पोटिंग कार्यो के उपयोग तथा उसका उपयोग पुस्तकालयों, स्कूलों, विधानसभाओं में मूलकृति का अनुपयोग कॉपीराइट मौलिक की विशेष अनुमति के बिना नहीं किया जा सकता है। किंतु उपयोगकर्ता के हितो की रक्षा हेतु इसके उपयोग हेतु विशेष छूट भी दी गई है। जो निम्नानुसार है–

1. अनुसंधान के उद्देश्य हेतु तथा निजी अध्ययन हेतु
2. आलोचना या समीक्षा हेतु
3. वर्तमान घटनाओं के रिपोर्टिंग हेतु
4. न्यायिक कार्यवाही हेतु
5. प्रदर्शन क्लब, समाज के प्रदर्शन हेतु

अतः कॉपीराइट कानून समाज तथा मौलिक कृति निर्माण दोनों के अधिकारों मे संतुलन तथा सामंजस्य भी स्थापित कराता है।

6. कॉपीराइट स्वामित्व

कॉपीराइट कानून लेखक, चित्रकार कलाकार, नाटककार, संगीतकार, डिजाइनर, ध्वनि रिकार्डर, चलचित्र निर्माता, वेबसाईट डिजाईनर को उनके मूलकृति की रक्षा के लिए अश्वासन प्रदान करता है तथा उनकी कलाकृतियों, रचनाओं, मूलकृतियो की बौद्धिक सम्पदा की रक्षा करता है। सामान्यतः कॉपीराईट यह निर्धारित करता है कि मूलकृति का मालिक कौन है। सामान्यतः एक लेखक ही मौलिक कृति मौलिक का मालिक होता है। लेखक जो साहित्य निर्माण हेतु अपने मूल विचारों का विभिन्न स्वरूपों मे अभिव्यक्त करता है। जैसे साहित्य या नाटक के कार्यो के लिए लेखक को संगीत के लिए संगीतकार को, चलचित्र निर्माण में फिल्म निर्माता को, ध्वनिरिकार्डिग में उसके निर्माता को, फोटोग्राफ में फोटोग्राफर को, कम्प्यूटर आधारित कामों सॉफ्टवेयर निर्माता वेबसाईट निर्माण में निर्माणकर्ता को कॉपीराइट के तहत मालिक के रूप में निरूपित किया जाता है। इसे और स्पष्ट रूप मे समझने हेतु संगीत निर्माण इकाई से समझा जा सकता है। जैसे जो गीत लिखे गीतकार, संगीत जो सेट के संगीत का निर्माण करें संगीतकार, जो संगीत गायन करें गायक, मिलकर किसी फिल्म के गीत का निर्माण करते है। अतः रिकार्ड करने वाला कॉपीराइट के तहत चयनित करा कर लायसेंस प्राप्त कर उसका उत्पादन प्रदर्शन कर सकता है।

कॉपीराइट आवंटन– कॉपीराइट मूलकृति के निर्माणकर्ता को उसके मौलिक कृति के मालिक के रूप में अधिकार प्रदान करता है। कॉपीराइट पंजीकरण हेतु व्यक्ति या अधिकृत ऐजेंट द्वारा

हस्ताक्षर युक्त विधिवत् इंगित करेगा कि निर्दिष्ट कार्य उसकी मूलकृति है। यदि कॉपीराइट प्राप्तकर्ता प्रकाशक है तो लेखक को रायल्टी देना तथा लेखक को उसके कानूनी उत्तराधिकारियों के मुद्रा आवंटित की जावेगी आदि जानकारी देना होती हैं।

7. डिजिटलाईजेशन तथा कॉपीराइट

डिजिटलाइजेशन एक सामान्य फोटोकॉपी प्रति प्राप्त करने जैसी ही प्रक्रिया है। डिजिटलाइजेशन प्रक्रिया एक रूपान्तरण स्थानांतरण विधि हैं जिसमें सामान्य पाठ्य सामग्री को मशीनी भाषा में परिवर्तित करने की कला है।

वह सभी सामग्री जो कॉपीराइट के अंतर्गत नहीं आते है तथा जहां बौद्धिक सम्पदा कृति के रूप में नहीं है। आसानी से पाठ्य सामग्री का डिजिटलाइजेशन किया जा सकता है। डिजिटल प्रकाशन भिन्न–भिन्न प्राकार के होते है जैस वेब इमेल, सॉफ्टवेयर, सी.डी. रोम, मल्टीमीडिया, डीवीडी, डेटाबेस, डिजिटल कृति, ऐनीमेटेड प्रोग्राम इत्यादि।

8. कॉपीराइट : महत्व

कॉपीराइट के निम्न महत्व हैः–

1. कॉपीराइट एक्ट में विचारों की मूल अभिव्यक्ति के विरूद्ध संरक्षण प्रदान कराता है न की विचारों को क्योकि विचार संयुक्त परिसंपति है जिनका आनंद सभी उठाते है।

2. कॉपीराइट का अधिग्रहण स्वतः होता है अतः कॉपीराइट पंजीयन अनिवार्य नही है। जबकि कॉपीराइट का पंजीयन कॉपीराइट के स्वामित्व से संबंद्ध किसी विवाद के संदर्भ में किसी न्यायालय मे प्राथमिक साक्ष्य का कार्य करता है।

3. कॉपीराइट साहित्यिक, नाट्य संगीत एवं कलाकात्मक कृतियों, सिनेमेटोग्रफ फिल्म व ध्वनि रिकार्डिग में मान्य है। कम्प्यूटर प्रोग्राम व डाटाबेस की सुरक्षा प्रदान कराता है तथा भारतीय कानून के अधीन साहित्यक कृतियों के रूप में संरक्षित करता है।

4. संरक्षण केवल सीमित समययावधि के लिए ही होता है जिसके बाद कार्य सार्वजनिक हो सकता है। साहित्यिक, नाटक, कलात्मक एवं संगीत संबंधित कृतियों के प्रकरण मे कॉपीराइट संरक्षण की अवधि लेखक का जीवन तथा साठ वर्ष है। सिनेमाटोग्राफ फिल्म व साउंड रिकार्ड के प्रकरण में यह साठ वर्ष है। जो कार्य प्रकाशन के वर्ष के अगले वर्ष तक होता है।

5. कॉपीराइट किए गए मूलकृति, कार्य के लेखक को स्वामी होने के तौर पर अपनी कृतियों के संदर्भ में कुछ विशेष आर्थिक अधिकार मिलते है। इनमें रिप्रोड्यूस करने, प्रकाशित करने, एडेप्ट करने, अनुवाद करने तथा संवाद अथवा सार्वजनिक प्रदर्शन के अधिकार है तथा वह अपनी इच्छानुसार किसी अन्य पार्टी को कॉपीराइट सौंप सकता है व लाइसेंस दे सकता है।

6. कॉपीराइट के तहत फरमॉफर को पचास वर्ष की अवधि के लिए फरफॉमेस व ब्रॉडकास्टिंग की सांउड या विजुअल रिकार्डिग के अनाधिकृत निर्माण व रिप्रोडक्शन को रोकने का अधिकार प्राप्त होता है।

7. कॉपीराइट के तहत ब्रॉडकास्टिंग को पच्चीस वर्ष की अवधि के लिए अपने ब्रॉडकास्ट पर ब्रॉडकास्टिंग रिप्रोडक्शन का अधिकर प्राप्त होता हैं।

8. कॉपीराइट के तहत पंजीकृत कॉपीराइट क्लेक्टिव सोसायटीज अथवा कोई व्यक्ति कॉपीराइट मालिक लाइसेंस इश्यू कर सकता है तथा फीस या रॉयल्टी कलेक्ट कर उसे मालिकों के बीच में वितरित कर सकने का अधिकार प्राप्त होता हैं।

9. कॉपीराइट का उल्लंघन तब होता है जब कोई व्यक्ति बगैर लाइसेंस के उपर्युक्त में से कोई भी कार्य करता है। जिससे कॉपीराइट के मालिकों को आर्थिक क्षति होती है। आर्थिक क्षति के अतिरिक्त, यह सृजनात्मक को भी दुष्प्रभावित करता है।

10. कॉपीराइट में उपयोगकर्ता के हितों की रक्षा के लिए कुछ छूट तय की गई है, जैसे– 1. शोध, निजी अध्ययन, समालोचना व समाचार रिपोटिंग के लिए ईमानदारी का सौदा, 2.

शैक्षिक प्रयोजनों, न्यायिक कार्रवाईयों, विधानसभा सदस्यों के एकमात्र, उपयोग के प्रयोजन हेतु तथा धार्मिक आयोजनों के लिए कृतियों का उपयोग, 3. भुगतान नहीं करने वाले आडिसंस को दी जाने वाली परफॉरमेंस होने पर परफॉरमेंस एमचर क्लब या सोसायटी द्वारा किया जा सकता है।

11. कॉपीराइट का उल्लंघन कॉपीराइट एक्ट के तहत दंडनीय एक अपराध है तथा पुलिस के पास आवश्यक कार्यवाही करने का अधिकार है तथा कोई भी पुलिस सब–इंसपेक्टर कॉपीराइट अपराध होने पर बिना वारंट प्रतियां सामग्री जप्त कर सकता है।

12. ऐसा कोई भी व्यक्ति जो जानबूझ कर कॉपीराइट का उल्लंघन करता है या उल्लंघन के लिए प्रेरित करता है उसे न्यूनतम छह माह से अधिकतम तीन वर्षो का कारावास तथा न्यूनतम पचास हजार व अधिकतम दो लाख रूपये के अर्थदण्ड से दंडित किए जाने का कानून में प्रावधान है।

13. कॉपीराइट एक्ट के तहत पंजीकृत कॉपीराइट सोसायटीज लाइसेंस प्रदान कर सकती है तथा फीस या रॉयल्टी कलेक्ट उसे तथा मालिकों के बीच बांट सकती है।

14. कॉपीराइट बोर्ड कॉपीराइट एसाइनमेंट से जुड़े विवादों को न्यायपूर्ण ठहराता है तथा अनिवार्य लाइसेंस प्रदान करता हैं।

15. सचिव, उच्च शिक्षा विभाग या चेयरमैनशिप में सभी संबंधित विभागों के सदस्यों, उद्योग के प्रतिनिधियों तथा विभिन्न राज्यों के डीजीपी समेत कॉपीराइट एनफोर्समेंट एडवाइजरी काउंसिल (सीईएसी) कॉपीराइट एक्ट के प्रावधानों एवं क्रियान्वयन की नियमित रूप से समीक्षा करती है।

16. कॉपीराइट का उल्लंघन रोकने के लिए केन्द्र सरकार के द्वारा कई अन्य उपायों में किए जाते है।

17. कॉपीराइट एक्ट लागू करने के लिए राज्य सरकार में विशेष सेल की स्थापना हेतु राज्य सरकारों को तैयार करना भी इस प्रक्रिया में सम्मिलित है।

18. उद्योग प्रतिष्ठानों व एनफोर्समेंट एजेंसियों के बीच उचित समन्वयन के लिए राज्यों में नोडल अधिकारियों की नियुक्ति करना भी कॉपीराइट प्रक्रिया के तहत किया जाता हैं।

19. जनता को कॉपीराइट नियम संबंधी जानकारी जागरूकता हेतु सेमिनार/वर्कशाप आदि का आयोजन किया जाना।

20. कोई भी व्यक्ति कॉपीराइट का उल्लंघन होने पर उसकी शिकायत किसी भी निकटतम पुलिस थाने पर बुक, म्यूजिक, विडियो फिल्म (सीडी/डीवीडी) के कॉपीराइट उल्लंघन की रिपोर्ट कर सकते है। वर्क की असली प्रतियों का क्रय करके व उनका प्रयोग करके आप कॉपीराइट का सम्मान कर सकते हैं तथा कार्य के निर्माता, जनता को उसे उपलब्ध करने में निवेश करने वाले–उद्योग के आर्थिक हितों की रक्षा कर रहे है। यह रचना के वास्तविक लेखकों को पुरस्कृत किए बगैर उनकी रचनाओं की गैरकानूनी प्रतियों के निर्माण एवं विवरण को हतोत्साहित करेगा।

21. कॉपीराइट का सम्मान करके, भारत को विश्व में आर्थिक शक्ति बनाने में मदद करना चाहिए।

9. उपसंहार

कॉपीराइट लेखको, चित्रकारों, कलाकारों, नाटककार, संगीतकार, डिजाइनर, ध्वनि रिकार्डिग, चलचित्र निर्माता, आर्किटेक्चर, अविष्कारों, कम्प्यूटर सॉफ्टवेयर निर्माताओं, वेबसाईट डिजाइनरों को उनके मूल्यकृति की रक्षा के लिए आश्वस्त करता है। ताकि उत्साहवर्धक, रचनात्मकता के लिए अनुकूल माहौल उत्पन्न किया जा सके तथा स्वस्थ प्रतिस्पर्धात्मक और सुदृढ़ अनुकूल

कृति निर्माण करने हेतु दूसरो को प्रेरित करे। साथ ही बौद्धिक सम्पदा का अधिकार. किसी व्यक्ति को उसकी कलात्मकता अथवा उत्पादकता का उपयोग करने या न करने का स्वामित्व प्रदान करता है। पेटेंट, कॉपीराइट, ट्रेडमार्क एवं ट्रेड सिक्रेट्स आदि किसी व्यक्ति के वास्तविक कार्य को सुरक्षा प्रदान करने के विभिन्न कानूनी तरीके है। जो कि सामूहिक रूप से बौद्धिक सम्पदा के अधिकार के अंतर्गत आते है।

संदर्भ सूची

1. कमलेश जैन. कॉपीराइट. रजत प्रकाशन, 2008
2. Neil Weinstock Netane.Copyright's Paradox. Oxford University Press, Apr 14, 2008 - 288 pages
3. Robert Burrell, Allison Coleman. Copyright Exceptions: The Digital Impact. Cambridge University Press, Feb 24, 2005 - 426 pages
4. Stephen M. McJohn . Copyright: Examples and Explanations. Aspen Publishers Online, 2006 - 356 pages